

BRIDGEWATER STATE COLLEGE

Undergraduate/Graduate
Catalogue
1976-1977

Curriculum

BRIDGEWATER STATE COLLEGE IS:

accredited by
The New England Association of
Schools and Colleges, Inc.
The National Council for the
Accreditation of Teacher Education

on the approved list of
The American Chemical Society
The Interstate Certification Compact

a member of
The American Association of Colleges
for Teacher Education
The American Association of
State Colleges and Universities
The Council of Graduate Schools
in the United States
The New England Conference on
Graduate Education
The Association of Graduate Deans
of Northeastern State Colleges
SACHEM*

a part of
The Massachusetts State College System

Boston State College
Bridgewater State College
Fitchburg State College
Framingham State College
North Adams State College
Salem State College
Westfield State College
Worcester State College
Massachusetts College of Art
Massachusetts Maritime Academy

*See page 26.

The Catalogue is a guide for information and not a contract. The College reserves the right to change requirements for degrees, prerequisites, fees, scheduling, and related matters. All such changes are implemented in such a way that any new curricular requirements will work no hardship on a student who has entered under an earlier set of requirements.

BRIDGEWATER STATE COLLEGE

Proudly Serving Public Higher Education
in the ten-member
Massachusetts State College System

76/77

Undergraduate/ Graduate Catalogue

Behavioral Sciences
Creative Arts
Humanities
Natural Sciences and Mathematics
Professional Education
Social Sciences
Interdisciplinary and
Pre-Professional Programs

S M T W T F S

September

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BRIDGEWATER
STATE COLLEGE

BRIDGEWATER
MASSACHUSETTS 02324

CALENDAR FOR THE AC

(See the Fall, Spring, and Summer brochures of the

FIRST SEMESTER — 1976

September

- 8 (Wednesday) Classes begin at 8:00 A.M.
- 21 (Tuesday) Fall Convocation — 11:00 A.M.
- 24 (Friday) Last day for graduate students to
file request for the November
Comprehensive Examinations.
- 28 (Tuesday) Last day to drop/add courses for
First Semester

October

- 1 (Friday) Last day for receiving completed
master's degree applications for
November Admissions.
- 11 (Monday) Columbus Day — no classes.
- 22 (Friday) End of First Quarter.

November

- 1 — 30 Master's degree Comprehensive
Examinations.
- 1 (Monday) Last day for undergraduate and
graduate students who expect to
receive their degree in February
to file the appropriate degree application form.
- 11 (Thursday) Veteran's Day — no classes
- 16 (Tuesday) Registration for Second
Semester begins.
- 23 (Tuesday) Thanksgiving Recess begins at
close of classes.
- 29 (Monday) Classes resume at 8:00 A.M.

December

- 1 (Wednesday) Last day for undergraduates
who expect to receive their degree in May
to file degree application form.
- 10 (Friday) Last day for graduate students
who anticipate the completion of degree work in May
to file the Petition for Acceptance of Transfer Credit
- 14 (Tuesday) Reading Day.
- 15 (Wednesday) First Semester examinations begin.
- 22 (Wednesday) First Semester examinations end.
- 23 (Thursday) Snow Day — Christmas and
Inter-semester recess begin.

Graduate Record Examinations, October 16 and December 11
(Lecture Hall, Conant Science Building).

EMIC YEAR 1976-1977

Division of Continuing Education for its calendar.)

SECOND SEMESTER — 1977

January

17 (Monday) Classes begin at 8:00 A.M.

February

4 (Friday) Last day to drop/add courses for
Second Semester.

Last day for graduate students
who expect to receive their degree in May
to file the appropriate degree application form.

21 (Monday) . . Washington's Birthday — no classes.

25 (Friday) . . . Last day for graduate students to file
request for April Comprehensive Examinations.

March

11 (Friday) End of Third Quarter.
Spring Recess begins at close of classes

25 (Friday) Last day for receiving completed
master's degree applications for May Admissions.

28 (Monday) Classes resume at 8:00 A.M.

April

1 — 30 Master's degree Comprehensive
Examinations.

8 (Friday) Good Friday — no classes.

18 (Monday) Patriot's Day — no classes.

May

3 (Tuesday) Registration for First Semester
1977-1978 begins.

17 (Tuesday) Reading Day.

18 (Wednesday) Second Semester examinations
begin.

25 (Wednesday) Second Semester examinations end.

27 (Friday) Last day for graduate students to
file request for the July Comprehensive
Examinations.

Last day for graduate students who anticipate
the completion of degree work in August to
file the Petition for Acceptance of
Transfer Credit.

28 — 29 Commencement Weekend.

31 (Tuesday) Last day for undergraduate and
graduate students who expect to receive
their degree in August to file the
appropriate degree application form.

Graduate Record Examinations, April 23 and June 11
(Lecture Hall, Conant Science Building).

S M T W T F S

January

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February

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March

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April

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May

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General Information

THE COLLEGE

Bridgewater State College, founded in 1840, has grown into a fully-accredited and internationally recognized multi-purpose institution, sharing the national tradition of providing high quality education supported in large part by the state.

The College today has a full-time undergraduate enrollment of over 4,000 students, a graduate enrollment of 1,800 students, and its total annual enrollment in all programs exceeds 10,000. The physical plant presently includes eighteen major buildings, with another under construction.

The individual and distinguishing spirit that has marked Bridgewater State College's transition from what once was a small teacher training institution to its present status is the philosophy of College Community, evolved on this campus by Dr. Adrian Rondileau, who assumed the presidency of the College in 1962. Dr. Rondileau explains the philosophy of College Community in the following manner:

"Although Bridgewater State College is a rapidly growing institution in number of students, number of faculty and the extending of our buildings and grounds, it strives to be first-rate academically, rather than to be large. It also strives to retain that all-important sense of the personal touch and genuine humaneness.

"We of the College are not only proud of our academic excellence, but are equally proud of the sense of College Community in which students, faculty, administrators, alumni, staff and parents have a feeling of belonging, and of working together for great common objectives. This is indeed unusual in this day and age, but it is much more important than it ever has been, if each student is to achieve his full educational potential.

"We welcome students who are interested in these twin goals of academic excellence and a truly cooperative College Community."

Bridgewater State College is an institution dedicated to the education of students for responsible citizenship and for leadership in business, the professions, and other vocations; an education that encourages the qualities that exemplify a moral, ethical, and humane person. The educational environment is designed to stimulate Bridgewater students to explore and develop their talents most fully and to create an atmosphere that is conducive to general personal growth as well as intellectual development.

It is to these purposes and objectives that the College is committed and which have inspired its graduates to make outstanding achievements and lasting contributions in many fields of human endeavor both in this country and abroad.

The Division of Continuing Education

The Division of Continuing Education offers undergraduate and graduate courses in the late afternoon and evenings, Saturday mornings, and summer sessions in Bridgewater and Hyannis. Undergraduate courses are open to all students who hold a high school diploma or the equivalent and meet the individual course prerequisites. Graduate courses are open to students holding a bachelor's degree and having the necessary course prerequisites.

Students may attend part time or full time. In general, full time students may carry no more than fifteen semester hours at the undergraduate level or twelve semester hours at the graduate level. Persons working full time should enroll in no more than two courses per semester.

The Division offers courses in all the academic departments of the college during the fall, spring and summer terms. It is possible to complete all degree requirements in most areas in the evening program. Certain undergraduate majors, such as anthropology, psychology, and sociology, are limited in the number of evening courses offered and it is sometimes necessary for students to spend part of their time in the day session in order to complete the necessary undergraduate degree requirements.

Information concerning acceptance into undergraduate degree programs should be obtained from the Admissions Office and for graduate programs from the Graduate Office. Once admitted, the student is assigned an advisor who helps the student plan his program. Students should work closely with their advisor to insure that all courses taken are appropriate to their degree program. Degree requirements and course descriptions are available in this catalogue.

Undergraduates who wish to take courses in the Division of Continuing Education but are regular full time day students must obtain a permission form from the Office of the Registrar to insure transfer of such credit to their permanent record. Likewise, undergraduates who are matriculated through Continuing Education, but need to do some of their course work in the day session, must obtain a similar permission form at the Office of Continuing Education for temporary transfer.

Persons may take courses through the Division on a non-matriculated basis. Such persons should obtain a copy of the brochure and registration forms from the Division Office and register as indicated in the brochure.

Further information and assistance may be obtained in the Division Office by calling 697-6141. The Office, located in the Maxwell Library, is open Monday through Thursday from 8 a.m. to 10 p.m., Friday 8 a.m. to 5 p.m., and to 5 p.m. weekdays when classes are not in session.

New England Regional Student Program

Bridgewater State College participates in a regional cooperative program administered by the New England Board of Higher Education. The program — the New England Regional Student Program — permits qualified New England residents to study with in-state tuition and admission privileges in certain programs at any of the state universities, state colleges, two-year colleges and technical institutes.

The program's purpose is to expand higher education opportunities for New England residents by making available on an equal basis those courses not commonly offered at every institution.

Information about the program can be obtained from the Bridgewater State College admissions office, from any guidance counselor, or from the New England Board of Higher Education, 40 Grove Street, Wellesley, Mass. 02181.

Center for International Education

In recognition of the international dimension of education in our increasingly interdependent world, the Trustees of the State Colleges established, in May of 1972, a Center for International Education. The Center, located on the campus of the Massachusetts Maritime Academy in Buzzards Bay, supplements and complements the course offerings and educational services of the colleges in a variety of ways. The objective is to con-

tribute to the acquisition of knowledge and understanding of many lands, peoples and cultures within our society. Most specifically, the objective is to broaden the scope of the preparation of future teachers and citizens so that through such infusion of experience they will be better equipped to deal with the transnational problems in the contemporary world.

Jointly with each State College, the Center sponsors undergraduate and graduate programs in student teaching overseas, graduate internships, academic study abroad, faculty study and exchange, and overseas teacher employment opportunities.

For additional information, contact Professor Walter Adamson in the Department of Political Science who serves as the international advisor for the Center at Bridgewater.

POLICY ON NON-DISCRIMINATION

As a part of the Massachusetts State College System, Bridgewater State College is committed to a policy of non-discrimination and affirmative action in its educational programs, activities and employment practices. It is the policy of the Massachusetts State College System not to discriminate on the basis of race, sex, color, national origin, age or religion. The Massachusetts State College System maintains its policy of non-discrimination and affirmative action in fulfillment of the requirements of Executive Order 11246 and 11375, Titles IV, VI, VII, IX and X of the Civil Rights Act of 1964 as amended in 1972 and other applicable state and federal statutes.

SERVICES TO STUDENTS

Throughout their college career, students are faced with numerous options which involve making adjustments, wise decisions and intelligent plans. Questions and concerns about one's educational program and academic development, housing, finances, health, social activities, part-time work, and post-college study or employment, are explored through mutual interaction with students by sensitive and dedicated professionals involved in the major areas of student needs. A wide range of activities is provided to complement and personalize the academic experience of each student.

Members of the Office of Student Affairs pursue through mutual interaction and interdependence the questions, needs, and alternatives which are of concern to the student. Specific services are provided in the areas of counseling, housing, finances, health, social activities, part-time work, and post-college study or employment.

COUNSELING CENTER

A primary function of the Office of Student Affairs is counseling with students. A wide range of counseling services is available. The professional staff is qualified to assist students with academic, personal, social, and career concerns. With the cooperation of the student, referrals to other helping persons and agencies are made when appropriate.

A counseling Psychologist working within the Office of Student Affairs is available to take referrals from students, faculty, and administrators and to direct counseling activities. In order that the student may enter into a relationship with any of the counselors within the Office of Student Affairs with a basic sense of safety and trust, strict adherence to confidentiality of information is assured.

CAREER COUNSELING AND PLACEMENT

Career Counseling and Placement Services are made available to all matriculated students and College alumni. Fill-time, part-time and summer position vacancies are posted on the bulletin boards located outside the Office of Student Affairs in Boyden Hall and in the Office of Teacher Preparation and Placement in Tillinghast Hall.

A wide range of current materials on careers and graduate school opportunities are made available for student use. Staff members hold small group career and life-work planning workshops throughout the year and are available for individual counseling and interest assessment.

Students are encouraged to set up personal employment files in the Office of Student Affairs or the Office of Teacher Preparation and Placement. Limited on-campus interviews are arranged.

HEALTH SERVICES

The Health Service offices are located on the ground floor of Tillinghast Hall. All undergraduate students are required to have a record of a complete entrance physical examination on file. A physician is on duty three mornings a week and registered nurses are on duty 24 hours a day. A gynecology clinic is held twice a month. Laboratory service providing most necessary tests is available free of charge to all students. Close contact is maintained with the Counseling Center in the Office of Student Affairs.

ORIENTATION

An Orientation Program is held for incoming undergraduates during the registration periods in June and January. Students are advised on their academic programs and are given opportunities to meet with each other in formal and informal settings. Through discussion groups, campus tours, social activities and the like, new students are exposed to the wide range of persons, activities and resources which constitute the Bridgewater College Community.

ACADEMIC COUNSELING

An Academic Advisement and Information Center, located in Boyden Hall, is available to assist students in planning their academic programs, in choosing their major or in securing academic counseling in specific problems. Since the College places the primary responsibility for educational progress on the student, it seeks to provide students with many sources of professional assistance. Faculty counselors, departmental advisors and the college professional counselors are available to students with academic problems. This service recognizes the difficulty students may encounter in adjusting to the pace of learning in college with its different type of assignments and demands. It wishes to provide an opportunity for the student who is seeking to address his problems to know more about himself, his aptitudes and special interests, while at the same time obtaining professional assistance.

COLLEGE READING LABORATORY

The College Reading Laboratory at Bridgewater State College conducts courses in the technical skills needed to complete college-level reading and studying tasks efficiently and effectively.

Full-time undergraduate and graduate students may utilize the services of the Laboratory for the development of their own skills through personally prescribed independent study programs.

Opportunity is also provided for guidance and direction in carrying out independent research projects in the areas of reading and study skills.

No academic credit is given for work carried out in the College Reading Laboratory.

Registration and information regarding the services offered may be obtained by contacting Dr. Peter A. Bizinkauskas, Director, College Reading Laboratory, Maxwell Library.

VETERANS AFFAIRS

This office offers services in the areas of general information on the current G.I. bill, counseling, educational guidance and assistance in job opportunities. It provides direct contact between the veteran and the Veterans Administration Regional Office in Boston or Providence.

Those students eligible for educational benefits are:

Veterans of the Vietnam era and service men who were released after January 31, 1966 and who fulfilled all the necessary requirements of the G.I. Bill.

Orphans, wives, and widows of veterans whose death or permanent total disabilities were service connected.

Wives and children of service men missing in action or prisoners of war, for more than 90 days.

For further information, contact Mr. Edward G. Elias, Veterans Affairs Officer, Boyden Hall.

INSURANCE

The Student Health/Accident Insurance Plan provides 24-hour coverage anywhere in the world for the twelve-month period beginning September 1. All full-time students must subscribe to this plan or submit proof that they and/or their families have the same or equivalent coverage.

Detailed information on the College plan is available from the College Health Service.

The College does not carry insurance which will compensate students or their families for losses suffered on campus because of fire, theft, water damage, etc.

It is advisable to check the extent of current home insurance or to seek coverage through a special policy.

SOCIAL AND CULTURAL EVENTS

A wide variety of activities is sponsored by college and student organizations to meet the many different needs and interests of the college community. Through formal and informal activities, plays, recitals, exhibits, concerts, dances, forums, speakers and off-campus trips, opportunities for enrichment are ever present. Such activities help students develop understandings and skills that enrich and extend classroom learnings and form an integral part of the college program.

ATHLETICS

The physical education department provides a wide range of intercollegiate, intramural and recreational activities for men and women. The objectives of the programs are to promote qualities of leadership and sportsmanship; enhance emotional and social development; and provide opportunities for the development of physical skills.

Intercollegiate athletics play an important part of life on the College campus. They provide for a high level of competition with other colleges in the eastern part of the United States. Intercollegiate sports include: baseball, basketball, cross country, football, golf,

ice hockey, swimming, tennis, track, club tennis and volleyball. The College is a member of the National Collegiate Athletic Association, the National Association of Intercollegiate Athletics, the Massachusetts State College Athletic Conference, the Eastern College Athletic Conference and the National, Eastern and Massachusetts Associations for Intercollegiate Athletics for Women.

RECREATION PROGRAMS

The intramural program provides competitive experiences in a variety of team and individual sports and includes modern dance, swimming, and gymnastic clubs.

The recreation program provides many opportunities for social involvement. Some of the highlights of the program include mountain climbing, camping, biking and skiing trips as well as many seasonal activities.

RELIGIOUS GROUPS

In the neighborhood of the campus there are available various religious groups and churches with which interested students may affiliate. A listing of these can be obtained in the Office of Student Affairs.

STUDENT LIFE POLICIES

A student is admitted to Bridgewater State College in the expectation that he will accept and abide by the high standards of conduct and scholarship established by the faculty, administration and student governing boards. The College reserves the right to require any student to withdraw who does not maintain acceptable academic standing. The College also reserves the right to dismiss with due process a student who does not meet the requirements of conduct and order, or whose behavior is inconsistent with the standards of the College.

STUDENT HANDBOOK

The Office of Student Affairs compiles the official *Student Handbook*, which explains such matters as campus policies, the governance structure, and the functions of various campus offices. The handbook is distributed to all registered students.

RESIDENCE HALL HANDBOOK

A Residence Hall Handbook is compiled by the Office of Student Affairs working with the residence hall governments. This handbook is distributed to all students in campus housing.

TRAFFIC CONTROL HANDBOOK

The Campus Security Office distributes copies of the *Traffic Control Handbook* as well as parking decals to registered students. Because of limited parking space, freshman and sophomore resident students are not permitted to have a motor vehicle on campus.

HOUSING

OFF-CAMPUS HOUSING

Private homes, rooming houses and apartments provide additional accommodations for students. Off-campus housing information can be obtained in the Office of Student

Affairs. Listings of available accommodations are maintained in this office, but are not compiled for mailing, since availability changes so frequently. Students themselves are responsible for contacting and making arrangements with landlords. Students are urged to register their local address with the Office of Student Affairs.

CAMPUS HOUSING

Six residence halls provide housing for approximately 1,200 undergraduate students — 800 women and 400 men.

DURGIN HALL — Durgin Hall, named in honor of a long-time former science teacher, accommodates 300 men. The lower floor contains reception rooms, a conference room, music room, post office, laundry, and vending machine room. It shares a cafeteria with Shea Hall.

SHEA HALL — Shea Hall, named in honor of Dr. Ellen M. Shea, former Dean of Women and Dean of Students, accommodates 300 women. The lower floor contains reception rooms, a conference room, music room, post office, laundry, and vending machine room. It shares a cafeteria with Durgin Hall.

TILLINGHAST HALL — Tillinghast Hall is named in honor of Nicholas Tillinghast, first principal of the school who served from 1840 to 1853. The residence houses 40 women.

SCOTT HALL — Scott Hall is named in honor of Dr. Zenos Scott, President of the College from 1933 to 1937. It houses 120 students.

WOODWARD HALL — Woodward Hall is named in honor of Eliza Bond Woodward, a revered teacher who served as a member of the faculty from 1857 to 1883. It has 85 double and triple rooms and accommodates approximately 240 women.

POPE HALL — Pope Hall, named in honor of Miss S. Elizabeth Pope, former Dean of Women who served the College for over six decades, houses 130 women.

All the residences have reception rooms and laundry facilities.

Each resident hall is supervised by a professional staff member, Resident Assistants, and residence hall governments. Complete information concerning residence hall programs and privileges is contained in the Residence Hall Handbook.

All resident students are required to take their meals in the College Dining Hall.

Requests for residence hall space for incoming students, either freshmen or transfer are made directly to the Admissions Office. Applications for residence hall placement far exceed the openings available. Assignment to a residence hall is based on the total evaluation of the candidate including the distance from one's permanent place of residence, academic standing and acceptance of residence hall policy. Students who are not immediately granted residence are placed on a waiting list. At the opening of the academic year the waiting list is turned over to the Director of Residence Halls. Further placement will be made by the Director. Students who are on a waiting list for space in a College residence hall are not guaranteed living accommodations within any specified time.

Although the College does not have housing facilities for married couples, marital status as such is, of course, not a factor in the assignment of a room in a residence to any individual student. On-campus housing is not available for graduate students, although a limited number of rooms is reserved for recipients of residence assistantships.

Each applicant for a residence hall reservation must pay a room deposit of \$50.00 following notification of acceptance to a residence hall. This deposit will be deducted from the total residence hall fee of students who attend and will be forfeited by those who do not enroll. Students who enroll for residence and then decide to commute will also forfeit their deposit.

Students who are assigned to residences are required to pay a \$50.00. "Residence Hall Security Deposit." Damages specifically performed by an individual student or an identifiable group of students are billed at the time of the assessment of damages. General and assessable damages are prorated and paid for from the students' security deposit. Unused deposits are refunded at the end of the academic year.

FINANCIAL AID

The purpose of financial aid at Bridgewater State College is to provide assistance necessary to allow equal access to educational opportunity for all academically qualified students. The financial aid programs are meant to provide support beyond the financial ability of the student and his family to provide for their education. In considering students for assistance, the College places emphasis on financial need. Financial need is the amount by which the total costs of college attendance, including reasonable costs of transportation, room and board, and other personal expenses, exceeds the expected family contribution. It is expected that the student and his family will make maximum effort to provide for educational expenses, and that aid from the college will be a supplement to the contribution of the family.

To provide a basis for fair and equitable evaluation in determining financial need, Bridgewater State College, as a participating member of the College Scholarship Service, requires all applicants to submit a Parents Confidential Statement (PCS). In the case of a student who is considered by the College to be financially independent of his parents, a Student Financial Statement (SFS) must be submitted. All applicants may obtain the PCS through their high school guidance offices, or from the Financial Aid Office at the College. This document should be mailed to the College Scholarship Service, Box 176, Princeton, New Jersey, 08540 no later than March 15 preceding the academic year for which they have been accepted. In addition, all students must submit a Bridgewater State College Supplemental Financial Aid Request Form. Incoming students who have filed a copy of their PCS with the College will receive this supplementary application shortly after notification of their acceptance of Admission. To be assured of full consideration, all students must submit either the PCS or SFS, in addition to the Bridgewater State College Supplemental Financial Aid Request Form, prior to April 15th for the Fall semester and prior to November 15th for the Spring semester. Applications will be accepted after these dates but the availability of funds for eligible students is not guaranteed. In order to be considered for renewal funds, candidates must reapply each year, following the same application procedures. Applicants will continue to be eligible as long as financial need is demonstrated and the student remains in good academic standing. The amount and type of aid offered may change due to the funds available to the College and to the dictates of program guidelines.

The College participates in several federal and state sponsored programs which include grants, loans, and jobs.

BASIC EDUCATIONAL OPPORTUNITY GRANT PROGRAM (BEOG).

To apply for a Basic Grant, a student must complete a form called "Application for Determination of Basic Grant Eligibility", which may be obtained from high school

guidance offices or at the College Financial Aid Office. The amount of the award in this undergraduate program will be based on the student's eligibility determined by financial need, the cost of attendance at a particular college or approved educational institution, and the monies available as appropriated by the Congress each year. Students should submit their notification of eligibility to Bridgewater State College so that the college can correctly calculate the grant available to the individual student.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT PROGRAM (SEOG).

This undergraduate program is designed to assist students of exceptional financial need who, without the grant, would be unable to continue their education. Up to one-half of the total financial need may be awarded in this program providing the applicant makes application each year and proven need continues to exist.

THE COLLEGE WORK STUDY PROGRAM (CWSP).

This program provides jobs for students who have financial need and who must earn a part of their educational expenses. This program is designed to assist undergraduates and graduate students who are enrolled in at least a half-time program of study. Students are assigned to various departments or agencies on and off campus and are paid an hourly rate, in accordance with campus policies and federal regulations.

THE NATIONAL DIRECT STUDENT LOAN PROGRAM (NDSL).

This program is for needy students who are enrolled at least half-time in an undergraduate or graduate academic program and who desire a loan to meet their educational expenses. Repayment of the loan at 3% interest begins 9 months after graduation and may be subject to various deferments and cancellation benefits depending on the vocation of the borrower after completion of their education.

THE MASSACHUSETTS HIGHER EDUCATION LOAN PLAN (HELP).

This is another source of financial assistance for the education of undergraduate or graduate students but designed to assist middle or upper income families. This particular loan enables a student to borrow directly from a bank, credit union, or savings and loan association, who is willing to make the education loan to that student. The maximum a student may borrow is \$2,500 a year and the interest cannot be more than 7 percent. This may vary, however, depending on the availability of funds and the policies of the lending institutions. Students who wish to apply for HELP loans should go directly to their local bank to obtain the necessary application forms. Eventually the College will receive these forms from either the bank or student, and the Financial Aid Office will certify enrollment, college costs, and recommend a proper loan amount to the lending agency. Many students are eligible for Federal Interest Benefits while participating in this program. If a student qualifies for these benefits, the Federal Government pays the interest while the student is attending school in good standing, until repayment begins.

MASSACHUSETTS BOARD OF HIGHER EDUCATION SCHOLARSHIP (MBHE).

Undergraduate students intending to apply for financial assistance at Bridgewater State College must, as a prerequisite for application, apply to the Massachusetts Board of Higher Education to enroll in their Scholarship Program. This Scholarship for Massachusetts residents, which covers the cost of tuition at State Colleges, requires both a PCS (or SFS) and a Massachusetts Board of Higher Education Scholarship Form. These forms may be

obtained in high school guidance offices, College Financial Aid offices, or from:

Board of Higher Education
Scholarship Office
182 Tremont Street
Boston, Massachusetts 02111

Opportunities also exist for student employment on the Bridgewater campus not related to the Federally sponsored program of College Work-Study. Applications for student employment in the College Bookstore, Library, Dining areas, Student Union, and Physical Education Department can be obtained in the individual departments. A large percentage of Bridgewater students assist themselves financially in this manner.

RESIDENCE ASSISTANTSHIPS

A limited number of residence assistantships are available. These positions offer qualified graduate students, both male and female, an opportunity to gain experience in human relations, counseling, and administration. Appointments are for the academic year, September-June. Remuneration is in the form of room, board, and tuition. For further information, including qualifications and duties, write to:

Graduate Residence Assistant Program
Office of Student Affairs
Bridgewater State College
Bridgewater, Massachusetts 02324

SCHOLARSHIPS AND FELLOWSHIPS

Information on private scholarships available to undergraduates at the College may be obtained from the Financial Aid Office or the Office of Student Affairs.

There are, at present, neither scholarships nor fellowships available to graduate students.

TUITION AND FEES*

DAY SESSION

Application and Advance Payment Fees:

A non-refundable undergraduate application fee of \$10 is required of all applicants. Upon acceptance, a non-refundable advance payment of \$50 must be made. This advance payment is credited against tuition when the student enters the College.

Semester Bill:

Students are billed twice a year, prior to the start of each semester. Bills are sent to students at their permanent addresses. Payment must be made prior to the due date which will be specified on the bill. Failure to comply will result in a late payment fee of \$5.

TUITION

Residents of Massachusetts

| | |
|---|----------|
| Full-time (12 or more credits) — per semester | \$250.00 |
| Part-time — per credit hour | \$ 20.00 |

*All charges are subject to change.

Non-Residents of Massachusetts

| | |
|---|----------|
| Full-time (12 or more credits) — per semester | \$600.00 |
| Part-time — per credit hour | \$ 50.00 |

REQUIRED SEMESTER FEES

| | |
|------------------------------------|---------|
| Health Services Fee | \$12.00 |
| Library Fee | \$ 5.00 |
| Student Government Association Fee | \$12.50 |
| Student Union Building Fee | \$17.50 |
| Athletic Fee | \$20.00 |

Part-time students are charged one-half the above fees.

OTHER FEES

| | |
|--|----------------|
| Physical Education Facilities Fee | \$12.00 |
| Required of all new students | |
| Placement Fee | \$ 5.00 |
| Required of all seniors | |
| Student I.D. Card Fee | \$ 5.00 |
| Required of all new students | |
| Educational Services | \$5.00–\$10.00 |
| Charged in all laboratory science courses and in a number of studio and practicum courses | |
| Late Registration Fee | \$ 5.00 |
| Commencement Fee | \$11.00 |
| Day session underclassmen are billed at \$2.50 a year; seniors at \$3.50 (Transfer students assessed retroactively); all others at time of graduation. | |
| Health Insurance Plan | \$75.00 |
| Student may obtain waiver if equivalent insurance is carried. | |

ROOM AND BOARD

| | |
|---|----------------------|
| Room — per semester | \$275.00 or \$340.00 |
| (Rates vary according to residence hall). | |
| Board — per semester | \$300.00 |
| (19 meal plan) | |

REFUND POLICY

Upon official written notification of withdrawal by the student, the following refund policy is applicable. THE DATE AND TIME THAT THE NOTICE IS RECEIVED WILL BE THE OFFICIAL DATE AND TIME OF WITHDRAWAL.

Tuition and Board

- 66 2/3% until the end of the first week of classes.
- 50% until the end of the second week of classes.
- 33 1/3% until the end of the third week of classes.
- After the third week of classes NO refund will be made.

Room

No refund for room charge will be given after one day of occupancy.

Fees

Unless stated otherwise, all fees are non-refundable and must be paid by all students who are in attendance for all or part of the semester.

DIVISION OF CONTINUING EDUCATION

Tuition and fees are payable at the time of registration.

TUITION

| | |
|--|-------------------------|
| Residents of Massachusetts | \$25.00 per credit hour |
| Non-Residents of Massachusetts | \$32.00 per credit hour |
| Audit | \$18.00 per credit hour |

FEES

| | |
|---|----------------|
| Registration Fee | \$10.00 |
| Library Fee | \$ 5.00 |
| Student Union Building Fee | \$ 5.00 |
| Educational Services | \$5.00-\$10.00 |
| Charged in all laboratory science courses and in a number of studio and practicum courses | |
| Student I.D. Card Fee (new students) | \$ 5.00 |
| Late Registration Fee | \$ 2.00 |
| Change of Registration Fee | \$ 2.00 |
| Commencement Fee | \$11.00 |

REFUND POLICY

A student who is entitled to a refund must obtain a form for each course for which a refund is due and file it in the office of the Division of Continuing Education. THE DATE AND TIME THAT THE NOTICE IS RECEIVED WILL BE THE OFFICIAL DATE AND TIME OF WITHDRAWAL. Telephone and other unofficial notices will not be accepted as notification of withdrawal.

Tuition

Refunds will be based on the scheduled calendar:

| | |
|---|-----------|
| Before the second meeting | 100% |
| After second meeting but before the third meeting | 80% |
| After third meeting but before the fourth meeting | 60% |
| After fourth meeting | no refund |

Fees

All fees are non-refundable.

The Undergraduate College

ADMISSIONS*

The basic aim of admissions requirements is to assure the selection of students who have demonstrated the ability and promise necessary for success in college studies.

FRESHMAN ADMISSIONS

All Freshmen accepted for admission are admitted to the College and not to a particular major. During the second semester of the Freshman year students may declare a major. See the catalogue section entitled "Academic Policies" for additional information.

Each candidate is considered on the basis of the following requisities:

A. Secondary School Preparation.

Candidates for admission must have a high school diploma from an accredited secondary school or the equivalent preparation. An official transcript of the candidate's secondary school academic record, including the grades of the first marking period or the first quarter of the candidate's senior year, must be filed by the high school.

B. College Entrance Examination Board.

All candidates must supply the following information:

1. The College Entrance Examination Board's Student Descriptive Questionnaire (SDQ).
2. The results of the Scholastic Aptitude Test. It is advised that students take this examination by January of the senior year. Any candidate submitting SAT scores taken during the junior year should have those scores and SDQ reports forwarded by ETS during the academic year in which application is made to the College.

C. Personal Qualifications.

Confidential data concerning the candidate, including recommendations and comments by teachers and counselors are given consideration in determining the fitness of the candidate for the proposed program of study.

DATES OF ADMISSIONS

Bridgewater State College has a "rolling admissions" policy. There is no one date on which the College notifies all applicants simultaneously of their acceptance. Candidates are notified on a continuing basis over a period of several months, beginning about January 15.

If the number of qualified applicants exceeds the number that the facilities of the College will accommodate, a waiting list is established.

Those candidates who have not met the requirements for admission by March 15 may jeopardize their chances of receiving consideration for acceptance since the College may close freshman admissions at this time.

TRANSFER ADMISSIONS

Bridgewater State College, with its strong emphasis on Transfer Student Programs, welcomes qualified Transfer Students and encourages those students to make application. The following is an explanation of the procedure for admission and conditions of acceptance:

*The College reserves the right to change admissions requirements at any time without advanced notice.

A. Transfer candidates will be evaluated for admission on the basis of their previous college academic record and must supply transcripts of that record.

All applications should be filed by December 1 for January admission, and by April 1 for September admission.

B. Whenever possible, degree credit will be granted for course work completed at other institutions of higher education. Courses which do not fit the degree program may be counted as fulfilling the free elective requirements of the four-year curriculum. The transfer student will be required to fulfill the same degree requirements as any other student.

C. Honor courses, programs of independent study, Advanced Placement, College Level Examination Program (CLEP) and advanced standing credit earned at other institutions of higher education will be accepted at Bridgewater.

D. Most Transfer Students complete at least two academic years at the College, although if all requirements are met satisfactorily, the College will grant a baccalaureate degree with a minimum of one full year of academic work taken at the College.

E. The number of transfers accepted by Bridgewater will be determined by existing vacancies in the various degree programs and the number of applicants determined eligible under the above guidelines. Among qualified and eligible transfer applicants, priority in admissions will be given to transfer students in good standing from within Massachusetts public higher education.

COMMONWEALTH TRANSFER COMPACT

Throughout higher education in the Commonwealth, an associate degree from any two-year college signatory to the Commonwealth Transfer Compact is honored as a unit and is construed as: (1) completion of at least 60 hours of work toward a baccalaureate degree, and (2) completion of at least 33 hours toward fulfillment of the General Education Requirements for the baccalaureate degree.

Bridgewater State College honors this policy and adheres to the following:

1. Definition of an associate degree transferable as a unit* toward a baccalaureate degree as the equivalent of 60 hours of undergraduate college level study, including:
 - a. 6 hours of English/communication
 - b. 9 hours of behavioral/social sciences
 - c. 9 hours of humanities/fine arts
 - d. 9 hours of mathematics/sciences
2. The awarding, upon acceptance, of the full number of credits earned while enrolled in the associate degree program.

READMISSION

Applications for readmission must be filed by June 1 for first semester readmission and December 1 for second semester readmission. Students who withdrew for low scholarship must arrange an interview with the Director of Admissions.

SPECIAL STUDENTS

The Day Session admits, on a semester basis, a number of non-degree students. Students seeking admission in this category should contact the Office of Undergraduate Admissions for additional information.

*Contingent upon acceptance for admission.

FOREIGN STUDENTS

All foreign students applying for admission to the College must file a preliminary application with the Foreign Student Advisor, indicating their educational background. If it is deemed that the student might be eligible for admission, the student will be asked to submit credentials. Students for whom English is a second language must submit the results of the Test of English as a Foreign Language (TOEFL). Foreign students should begin the application procedure no less than nine months in advance of the expected date of admission.

SPECIAL ADMISSIONS PROGRAMS

Progress

The Program for the Recruitment and Retention of Special Students (PROGRESS) was established to help high school graduates who possess both the motivation and potential necessary to achieve a college degree, but who because they are members of a minority group or come from a background of poverty have not been properly prepared to undertake a regular freshman program.

The Scholastic Aptitude Test (SAT) should be taken even though no great emphasis will be placed on the scores when determining admission through PROGRESS. The high school performance of students applying through PROGRESS will be judged on the basis of identifiable achievement patterns over the high school experience rather than on class standing or rank.

Letters of recommendation from guidance counselors, teachers, and in some cases community leaders, are a great assistance in evaluating an applicant's ability to do college-level work.

Each student admitted through PROGRESS is assigned an academic advisor and will be encouraged to carry courses and course loads suitable to individual needs. Students must carry at least nine semester hours, but no more than 15 hours in the freshman year.

Tutorial services are available for all courses. The courses taken by PROGRESS students are the same as those taken by all students at Bridgewater. PROGRESS students must meet the same degree requirements for graduation as do all other students at the College.

Financial assistance is available through the Financial Aid Office. The amount of financial assistance each student will receive is dependent upon individual needs as demonstrated in the standard financial aid application form (Parents Confidential Statement).

Outreach

OUTREACH is a program designed for the recruitment, counseling and tutoring of students who have traditionally had limited access to higher education. This group would include among others, minority groups, veterans, and working adults. An important aspect of the OUTREACH program is that normal admission requirements may be altered in individual situations. Cognizant that applicants under the OUTREACH program may be presenting varied levels of preparedness, it is suggested that interested applicants contact the Office of Undergraduate Admissions to arrange for a personal interview.

Program For Registered Nurses

Provisions have been made for graduates of three-year diploma schools of nursing to complete programs leading to degrees in any of the academic majors being offered at the College.

While encouraging Registered Nurses to pursue degree work for personal enrichment, the College supports the guidelines of the National League of Nursing for the professional

education of nurses. These guidelines caution nurses whose career goals include the opportunity to assume supervisory and/or teaching responsibilities in the field of nursing, that degree programs to be pursued should be taken only at those institutions which offer degrees in Nursing Education.

Through this special admissions program, students accepted to the College are granted 60 credit hours for their school of nursing work. Where applicable, these credits may be used to meet General Education, major, or elective requirements. As with all others transferring into the College, Registered Nurses are expected to meet the same degree requirements as outlined in the **Academic Policies** section of this catalogue.

HEALTH

All candidates, regardless of the intended area of study, are required to have a health examination before entrance. Information concerning such examinations is forwarded to prospective students after notification of acceptance. The candidate, if a teacher education program is the intended area of study, must be in good physical and mental health, free from any disease, infirmity, or other defect, which would render the candidate unfit for public school teaching.

ADVANCED STANDING: ADVANCED PLACEMENT AND CLEP

Advanced Standing with college credit and reduction of distributions of the College requirements is granted to entering students who have demonstrated college-level proficiency through established procedures.

Advanced Placement Program

The College Entrance Examination Board offers the Advanced Placement Program, through which secondary schools deliberately prepare able, interested students for advanced work at college in the following disciplines: American history, art, biology, chemistry, English, European history, French, German, Latin, mathematics, music, physics, and Spanish. Scores of 3 or above are considered satisfactory by the College and credit is awarded accordingly.

College-Level Examination Program (CLEP)

Bridgewater State College encourages able students to seek advanced standing through one or more of the CLEP examinations described below. Credit is awarded for scores at the 50th percentile or above.

Students may arrange to take the CLEP Examination at any of the national tests centers, including Bridgewater State College.

There are two types of CLEP (College-Level Examination Program) examinations; the General Examinations and the Subject Examinations. Both measure factual knowledge and understanding, as well as the ability to see relationships and apply basic principles to new problems. The examinations are not based on courses given at Bridgewater State College but on typical courses in a variety of colleges throughout the country.

GENERAL EXAMINATIONS. The College requires all students to complete some study in certain fields that are deemed important for everyone, regardless of special interests or occupational goals. Such required study is called "General Education". The CLEP General Examinations provide a way to show that you have acquired some general education; the equivalent of what is given in required freshman and sophomore courses at the college.

There are five General Examinations which can be applied toward the General Education Requirements at Bridgewater as follows:

| General Examinations | Credit Allowed | Area or Course Equivalent |
|-------------------------------------|----------------|--|
| English Composition * | 3 | English Composition I (EN 101) |
| Mathematics | 6 | Mathematics-Natural Sciences (MA 105, 106 or 108) |
| Natural Sciences (Biology/Physical) | 6 | Mathematics-Natural Sciences (BI 102, PH 200) |
| Humanities (Fine Arts/Literature) | 6 | Humanities & Creative Arts (AR 110, EN 221) |
| Social Sciences-History | 6 | Social Sciences |

*(Bridgewater requires a supplementary essay to be taken at the College)

SUBJECT EXAMINATIONS. The subject examinations now offered are comparable to the final or end-of-course examinations in particular undergraduate courses. A student who has completed one of these courses successfully in college can probably earn satisfactory scores on the corresponding CLEP Subject Examination. So can the person who has learned the subject in some other way, such as by independent study. Subject examinations are currently available in most areas of study offered at the freshman level of college.

| Social Sciences: ¹ | Credit Allowed | Medical Technology: ³ | Credit Allowed |
|---|----------------|---|----------------|
| Afro-American History | 3 | Anatomy, Physiology, Microbiology | 6 |
| American Government | 3 | Microbiology | 3 |
| American History | 6 | Mathematics:¹ | |
| General Psychology | 3 | College Algebra | 3 |
| Introductory Macroeconomics | 3 | College Algebra-Trigonometry | 3 |
| Introductory Microeconomics | 3 | Calculus with Analytic Geometry | 6 |
| Introductory Micro- and Macroeconomics | 3 | Statistics | 3 |
| Introductory Sociology | 6 | Trigonometry | 3 |
| Western Civilization | 6 | Education:² | |
| Sciences:¹ | | Educational Psychology | 3 |
| Biology | 6 | History of American Education | 3 |
| General Chemistry | 6 | Human Growth & Development | 3 |
| Humanities:¹ | | Tests and Measurements | 3 |
| American Literature | 6 | Business:³ | |
| Analysis/Interpretation of Literature | 6 | Computers and Data Processing | 3 |
| College French, Levels I and II† | | Elementary Computer Pro- gramming-FORTRAN IV | 3 |
| College German, Levels I and II† | | Introductory Accounting | 6 |
| College Spanish, Levels I and II† | | Introductory Business Law | 3 |
| English Literature | 6 | Introduction to Business Management | 3 |
| English Composition* | 6 | Introductory Marketing | 3 |
| Freshman English* | 6 | Money and Banking | 3 |

* Bridgewater requires a supplementary essay to be taken at the College

†Credit decisions are adjusted on the basis of total score in relation to prior years of study, not to exceed 6 semester hours.

¹Credits can be applied toward General Education Requirements, requirements for the Major, or toward electives.

²Credits can be applied toward electives or toward a minor in Secondary Education.

³Credits can be applied only toward electives.

ACADEMIC PROGRAMS

BACHELOR OF ARTS/BACHELOR OF SCIENCE

The Bachelor of Arts and Bachelor of Science degree programs allow students to select from a number of areas, and provide preparation for secondary school teaching (if secondary education is elected as a minor), graduate school, and fields of endeavor related to the major area of study. Majors are currently offered in:

Anthropology
Anthropology/History
Art
Behavioral Science/History
Biology
Chemistry
Chemistry/Geology
Communication Arts & Sciences

Earth Science
English
French
Geography
History
Mathematics
Philosophy
Physical Education

Physics
Political Science
Psychology
Psychology/History
Sociology
Sociology/History
Spanish

Except for those students in the Humanities, Creative Arts, or History, a student may decide, after having chosen a major, whether to earn a Bachelor of Arts or a Bachelor of Science degree by the selection of free electives. A free elective is any course which is not used to meet the General Education Requirements or major requirements.

Thus, the Bachelor of Science degree is awarded to those who choose the majority of their free electives in the Social and Behavioral Sciences or Natural Sciences and Mathematics, while the Bachelor of Arts degree is awarded to those who choose the majority of their free electives in the Humanities or Creative Arts.

Students are advised to consult with their department chairperson or major advisor early in their academic career, but no later than the end of the sophomore year, in order to be certain that course selection will allow graduation with the desired degree.

BACHELOR OF SCIENCE IN EDUCATION

The Bachelor of Science in Education prepares students for teaching in the elementary schools, or for teaching in the area of Special Education.

Majors are currently offered in:
Early Childhood Education
Elementary Education
Special Education

MAJOR REQUIREMENTS

A student must meet all requirements of the major as specified under the departmental listings. A minimum of 24 credits and a maximum of 36 credits within the major may be required by a department. The 24 to 36 credits reflect all courses taken in the major department, including those which are listed under the distribution of General Education Requirements. The student should select a major by the end of the sophomore year.

In order to graduate with a double major, a student must meet all requirements of both majors sought.

MINOR

Students may elect a minor consisting of 18-21 credits from most departments at the College. Specific requirements for a minor are found under the departmental descriptions. Minors are currently offered in:

Anthropology
 Art
 Biology
 Chemistry
 Chemistry-Geology
 Computer Science
 Communication Arts & Sciences
 Earth Science
 English
 French

Geography
 German
 History
 Instructional Media
 Italian
 Library Science
 Mathematics
 Music
 Philosophy
 Physical Sciences

Physics
 Political Science
 Portuguese
 Psychology
 Religious Studies
 Russian
 Secondary Education
 Sociology
 Spanish
 Urban Affairs

DIRECTED STUDY

The college encourages students to pursue certain of their interests through directed study. Such an undertaking involves independent thinking, hard work, and creativity along with the guidance and help of a faculty member. The end result should be a paper or project accepted by the faculty member working with the student. Independent Study is available for the pursuit of such projects requiring independent work for a maximum of six credits. Application forms for a directed study are available from the student's department and should be submitted to the department chairperson prior to registration.

INTERNSHIP

A number of departments within the College offer students the opportunity to enroll in an Internship, Practicum, or Field Experience for academic credit. Such experiences provide advanced students, usually in their third or fourth year, the chance to undertake a supervised practical experience within their field of study. Normally, field experience opportunities are available only during the regular academic year.

Students interested in such a field experience have the option of (1) consulting with their faculty advisor for details on programs available through the department, or (2) developing their own program proposals, subject to the approval of the department. If the field experience desired is proposed by the student, it is the student's responsibility to locate a faculty member who will provide the necessary supervision.

Application and Selection:

Application forms for a field experience are available from the student's department. The completed form must be filed with the chairperson of the department in which the field experience is to be undertaken, and must be filed with the department no later than the end of the first quarter of the semester prior to the semester in which the field experience is to be undertaken.

The department will screen all applications in order to select those students best suited for the positions available. The chairperson will forward the approved application forms to the Registrar to enroll those students selected.

Supervision and Grading:

Supervision, evaluation and grading of a field experience is the responsibility of each department offering such a program. A student may be removed from the program if, in the judgement of the faculty supervisor, it is in the best interests of the student, agency, and/or College. Grades are based on written evaluations from both the faculty supervisor and the agency supervisor.

Credit:

From three to fifteen credits in field experience may be earned and applied toward graduation requirements. The number of these credits which may apply toward the major will be determined by each department. A minimum of 45 clock hours in the field is required for each credit hour granted.

Compensation:

A student receiving credit for a field experience may not receive monetary compensation other than for certain expenses, such as travel, which an agency may with to pay.

HONORS PROGRAM

The general aim of the Honors Program is to encourage students to do more intensive, independent, and creative work. More specifically, its aims are: to encourage superior and interested students to achieve their fullest intellectual potential through critical thinking, scholarship, and research; to help these students improve their skills in oral and written expression; to present an opportunity for frequent and close association of able students for intellectual exchange among themselves and with faculty members and other scholars; and to create an atmosphere which fosters intellectual, artistic, and academic achievement.

The following departments are at present participating in the Honors Program: Biology, Chemistry, Elementary Education, English, History, Foreign Languages, Mathematics, Communication Arts and Sciences, and Health and Physical Education.

Students who are interested should consult the Chairperson of the Honors Program Committee in their department or members of the College Honors Committee.

INTERDISCIPLINARY PROGRAMS

The College offers a number of interdisciplinary programs, providing majors, minors and pre-professional programs. See the section on Interdisciplinary Programs for detailed information.

CROSS REGISTRATION

CAPS

College Academic Program Sharing is designed to provide State College System students the opportunity to study at another College within the System in order to add a different or specialized dimension to their undergraduate studies. Students may take 3 to 30 semester hours of credit without going through formal registration procedures and without a formal transfer credit approval process.

SACHEM

Through the Southeastern Association for Cooperation of Higher Education in Massachusetts, students may cross-register for courses which are not offered at their own institution without going through formal registration procedures. Tuition is covered within the student's fulltime tuition charge at Bridgewater State College. Schools participating in this program include: Bristol Community College, Cape Cod Community College, Dean Junior College, Massachusetts Maritime Academy, Massasoit Community College, Stonehill College, Swain School of Design, Southeastern Massachusetts University, Wheaton College.

SACHEM colleges share library resources and certain programs.

For further information on either of these programs contact the Office of The Registrar.

GENERAL EDUCATION REQUIREMENTS

The College requires that all students complete certain General Education Requirements in addition to courses in their major field of study and electives. These requirements are distributed throughout the various academic departments so that students will study a variety of disciplines during their college career.

Opportunity exists for students to design their own General Education Requirements

rather than following the requirements as outlined. For detailed information on this, contact the Coordinator of Academic Advising.

Distribution of GER courses must include the number of credit hours indicated for groups I-V (total of 39 credits). The remaining six credits may be selected from group VI.

| | |
|------------------------|---------------|
| I HUMANITIES | 9 crs. |
| English Composition I* | 3 crs. |
| Literature | 3 crs. |
| Philosophy | 3 crs. |

*Proficiency in English Composition is required of all students. This requirement may be satisfied by passing EN 101 (English Composition I) with a grade of B or better. Students who receive a grade of C or below in EN 101 are required to take EN 102 (English Composition II), which does not count toward General Education Requirements. The requirement may also be met by successfully completing the AP, CLEP, or departmental challenge examination.

| | |
|--|---------------|
| II SOCIAL SCIENCE | 9 crs. |
| History** | 6 crs. |
| Economics, Geography (as a Social Science), History, Political Science | 3 crs. |

**Massachusetts state law requires all students to take a course in the Federal and State Constitutions. Students may fulfill this requirement by electing HI 221 (U.S. History to 1865). Those who do not elect HI 221 must take PO 273 (U.S. and Massachusetts Constitutions).

| | |
|--------------------------------|---------------|
| III CREATIVE ARTS | 6 crs. |
| Art | 3 crs. |
| Music | 3 crs. |
| Communication Arts and Science | 3 crs. |

| | |
|-------------------------------|---------------|
| IV BEHAVIORAL SCIENCES | 6 crs. |
| Anthropology | 3 crs. |
| Psychology | 3 crs. |
| Sociology | 3 crs. |

| | |
|---|---------------|
| V NATURAL SCIENCES & MATHEMATICS | 9 crs. |
| Science (including one semester of a lab science) | 6 crs. |
| Mathematics and Computer Science | 3 crs. |

| | |
|---|---------------|
| VI GER ELECTIVES | 6 crs. |
| Humanities | |
| Creative Arts (not more than 3 credits from each area) | |
| Social Sciences (including Geography as a Social Science) | |
| Behavioral Sciences | |
| Health | |
| Natural Sciences, Mathematics and Computer Science | |

All students must successfully complete the non-credit course LIBRARY INTRODUCTION (LI 102). This requirement should be met during the first year of attendance.

Guidelines on General Education Requirements

1. Only one course (3 credit hours) in a student's major field may be applied toward the GER's, except for English and History major programs in which a maximum of 6 hours may be applied. However, cognate courses required by the major will apply, as appropriate, toward the GER's.
2. No co-curricular activities may be used to satisfy the GER's.
3. Beyond the General Education and the major requirements, all remaining courses are free electives. A free elective is any course not required to fulfill either the General Education or the departmental and cognate requirements of the major.

ACADEMIC POLICIES

The regular academic year consists of two semesters of approximately sixteen weeks each. Curricula leading to baccalaureate degrees are so planned that a student pursuing a normal program will ordinarily be able to complete the requirements for graduation in four years or eight semesters.

GRADUATION REQUIREMENTS

Degrees will be awarded to candidates who have fulfilled the following:

1. A MINIMUM of 120 credits, distributed according to the General Education Requirements and the requirements of a major;
2. completion of at least 30 credit hours at Bridgewater;
3. a minimum cumulative quality point average of 2.0;
4. clearance of all financial debts to the College.

No student's name may appear on the graduation list unless the number of credits, including those completed successfully in the last semester, are sufficient to meet the minimum requirements for graduation.

Participation in graduation ceremonies is limited to those students who have met all graduation requirements. Students who have not met these requirements will be given the opportunity to participate in a subsequent ceremony.

DEGREE APPLICATIONS

All students who expect to receive their degree from Bridgewater State College are required to complete a formal degree application. These applications are available in the Office of the Registrar.

Degree Application cards, signed by the Chairperson of the student's major department, must be returned to the Office of the Registrar by:

November 1 for February graduation

December 1. for May graduation

May 31. for August graduation

GRADUATION WITH HONORS

Academic excellence for the baccalaureate program is recognized by inscribing the degree *summa cum laude* (cumulative average of 3.8), *magna cum laude* (3.6), or *cum laude* (3.3). The cumulative Q.P.A. for Honors is based on all college work attempted.

GRADING SYSTEM

The college uses the letter-grade system of marking to indicate the student's relative performance; A — Superior; B — Good; C — Satisfactory; D — Poor; E — Failure; W — Withdrawn. In computing averages, grades are assigned the following numerical values: A — 4; B — 3; C — 2; D — 1; E — 0. No numerical value is assigned to P (Pass) and F (Fail) grades.

An incomplete may be given by an instructor only when a student has missed the final examination for good reason or has not completed a major assignment which can be finished within a short time. Incompletes must be made up no later than the fourth week or the regular academic semester following that in which the Incomplete was recorded. A grade of "E" will automatically be entered on the transcript of any student who fails to meet this requirement.

Grades for courses which are taken through the Division of Continuing Education become a part of the student's Day Session record and thus are used in computing the Q.P.A.

No course for which a passing grade was received may be repeated for credit.

DEAN'S LIST

The Dean's List is published at the termination of each academic year to honor academic achievement. A 3.3 average is required with a minimum of 24 credits completed.

ACADEMIC STANDING

| Credit Hours Attempted | Probation QPA | Separation below this QPA |
|---------------------------|------------------------------|------------------------------|
| 0 — 15 | 1.00 — 1.49 | 1.00 |
| 16 — 30 | 1.50 — 1.64 | 1.50 |
| 31 — 45 | 1.65 — 1.74 | 1.65 |
| 46 — 60 | 1.75 — 1.84 | 1.75 |
| 61 — 89 | 1.85 — 1.99 | 1.85 |
| 90 and above | Must maintain 2.00 or better | |

Transfer students are allowed a first semester minimum QPA of 1.50. Thereafter the standards cited above (which must include transfer credits) will apply.

Warning notices are sent at mid-semester to all freshmen and sophomores who fail to maintain a "C" average in any course.

Students are placed on academic probation at the end of the semester if they fail to maintain the minimum QPA required.

Any student whose QPA falls below the minimum or who remains on probation for two successive semesters will normally be separated from the College.

Any student separated from the College may appeal that decision through the Academic Standing Committee.

Academic probation will be supervised by the student's academic advisor and the Academic Dean, and may involve (1) an adjustment in the student's academic load, (2) frequent interviews between the student and advisor for the analysis of difficulties and for checking the student's progress, (3) a stipulation that certain courses be taken to improve the student's academic performance, (4) restrictions on the student's extracurricular activities, and (5) other such precautions as are deemed advisable by the advisor and/or the Academic Dean.

REGISTRATION

Each semester a registration and counseling period is held to select the next semester's program and to discuss the overall standing and requirements of the student.

COURSE LOADS

Undergraduates must carry a class load of 12 to 18 credit hours. A normal course load is 15 hours. Permission to carry less than 12 hours or more than 18 hours can be granted by the Dean of Undergraduate Studies.

Students may not carry semester courses during the quarter in which Student Teaching is done.

ATTENDANCE POLICY

Class attendance is presumed to be an important part of the educational process in most courses. At the beginning of each course, the faculty member should explain to the students his policy on attendance, particularly what he considers excessive absence. Having this information, students are expected to use judgment and discretion about attending the class. First-semester freshmen and students on probation are allowed no unexcused absences.

COURSE DROPS AND ADDS

During the first three weeks of a semester or the first eight class days of a quarter, students may drop or add courses and no grade will be recorded. Drop-Add forms are available from your department chairman and must be signed and returned to the Office of the Registrar during the Drop-Add period.

In cases where a student does not follow these procedures a grade of "E" will be entered on the record. This grade will be used to compute the QPA.

WITHDRAWAL FROM COURSES

If, for some serious reason, a student wishes to withdraw from courses after the Drop-Add period, written permission must be secured on forms provided by the Office of the Registrar. Only if such a form is filed in the Registrar's Office and the second copy returned to the head of the department in which the student is majoring may the grade of "W" be recorded. In all other instances a grade of "E" shall be given. Under no circumstances will permission to withdraw from a course be granted after the twelfth week of classes.

WITHDRAWAL FROM THE COLLEGE

Official withdrawal forms may be obtained from the Office of the Registrar and must be signed by the Dean of Students. Should the student leave the College without giving official notification, failing grades will be recorded for all courses.

Students who withdraw from the College in good academic standing may re-enter later by applying for readmission through the Office of Admissions.

Students who withdraw due to low scholarship may not take courses in either the Day Session or the Division of Continuing Education for at least one semester, not including the Summer Session. It is highly recommended that such students give evidence of a semester's academic work at another institution of higher learning, upon reapplying at the College.

If readmitted, the student is placed on academic probation and must achieve a minimum Q.P.A. of 2.00 in order to continue.

DECLARATION OF MAJOR FOR FRESHMEN

All students who entered as Freshmen must formally declare a major or choose the status of an undeclared major in the second semester of the Freshman year. Prior to this declaration freshmen may change their area of interest by obtaining the necessary forms from the Office of Academic Advising. Although Early Childhood, Elementary Education, and Special Education majors may not be formally admitted into the Teacher Education program until the second semester of the Sophomore year, they must confirm their continued interest in these majors by the same process used by the other Freshmen for declaration of their majors.

CHANGE OF MAJOR

Students may change majors at any time by obtaining a "change of major card" from the Office of the Registrar, securing the signatures of the department chairperson involved, and filing the completed card with the Registrar.

While admission to most majors is generally unrestricted, waiting lists for certain majors are established. In addition to the procedures above, students wishing to enter these majors must obtain the signature of the Dean of Undergraduate Studies prior to being placed on the waiting list. Once an opening becomes available, the student will be notified in writing by the Dean and must meet with the new department chairperson to obtain a change of program.

DECLARATION OF MINOR

In order to be enrolled in any minor offered by the College, a student must declare the intended minor on forms available from the Office of the Registrar.

Certification that the requirements of the minor have been met is made on the Degree Application card by the department offering the minor. Approved minors are recorded on the permanent record of the student upon graduation.

CREDIT BY EXAMINATION

The College encourages qualified students to meet certain graduation requirements through "Credit by Examination." Currently, the College will award credit for successful completion of the College Level Examination Program's (CLEP) general or subject area examinations. In addition, certain departments offer their own examinations for which credit can be awarded. Additional information can be obtained from the Office of the Academic Dean.

TRANSFER OF CREDIT AFTER ADMISSION

In order for undergraduates in the Day Session to receive credit for courses taken at other institutions, approval must be obtained in advance from the appropriate department chairperson and the Dean of Undergraduate Studies.

Application forms are available in the Office of the Registrar. Applications for approval of a course from another institution should be accompanied by the appropriate catalogue from that institution. Transcripts of these approved courses must be submitted to the Registrar's Office within 6 weeks after completion of the course. It is the student's responsibility to have official transcripts sent directly by the institution to the Office of the Registrar.

Grades of courses which are taken through the Division of Continuing Education become a part of the student's Day Session record and thus are used in computing the Q.P.A.

PLAGIARISM

Academic honesty is expected of all students. Plagiarism and cheating are not condoned and are subject to an academic penalty, which may be failure for the course in which the violation took place. A record of the violation is kept and repeated offenses may result in suspension or dismissal from the College.

STANDARDS FOR REPRESENTING THE COLLEGE.

In order to represent the undergraduate College in intercollegiate competition, or as a member of the student government, a student must:

Be in good academic standing.

Be a full-time student, which is defined as carrying a minimum of 12 semester hours of credit.

Not have completed undergraduate degree requirements.

Have completed not more than eight full semesters in the day session. Such eight full semesters in the case of a transfer student include the number of semesters' work granted in transfer credit.

The Graduate School

THE GRADUATE SCHOOL

The Graduate School at Bridgewater State College acts as a coordinating institution among the several departments engaged in graduate instruction. The Dean and the Graduate Council, together with administrators and faculty, work toward the maintenance of uniform standards for higher degrees. As of January 1, 1976, 1856 students were enrolled in graduate programs leading to a master's degree at Bridgewater.

The primary aim of the Graduate School is to produce graduates who are not only competent in their major field, but are also aware of their professional responsibilities. Another major goal is to foster research on the part of both faculty and students. Every graduate student is given the opportunity to engage in original investigation under the direction of a member of the faculty.

The Office of the Graduate School, which is located in Rm. 211 of the Conant Science Building, is open from 8:00 A.M. to 5:00 P.M., Monday through Friday, throughout the year except for legal holidays. In addition, the Office will be open until 7:00 P.M. each term during both the week of Continuing Education "in-person" registration and the first week of Continuing Education classes.

Persons interested in working toward a master's degree on either a full-time or part-time basis should obtain a current copy of the College Catalogue, together with appropriate application materials, at the Office of the Graduate School. Catalogues are bulk-mailed on a monthly basis to those who request them.

Appoints with the Assistant Director of Graduate Studies may be made by telephoning 697-8321, Ext. 301. Official notification of such matters as acceptance, grades, and results of all examinations will be released by letter only.

Students are strongly urged to familiarize themselves with the general policies, procedures, and degree requirements of the Graduate School outlined in the following pages prior to enrolling in courses carrying graduate credit.

GRADUATE FACULTY

The Graduate Faculty is the academic policy-making body of the Graduate School subject to the review and approval of the Dean of the Graduate School, the Academic Dean, and the President. Academic policies which the Graduate Faculty recommends and which are approved respectively by the Dean of the Graduate School, the Academic Dean, and the President, are administered by the Dean of the Graduate School.

GRADUATE COUNCIL

The Graduate Council conducts the business of the Graduate Faculty and assists the Dean of the Graduate School in the execution of academic policy related to graduate study and associated research. The Graduate Council is composed of the Dean of the Graduate School (Chairperson), the Director of Continuing Education, the Dean of Undergraduate Studies and of Special Programs, the Assistant Director of Graduate Studies (Secretary), and seventeen members of the Graduate Faculty elected by members of the Graduate Faculty. The President of the College and the Academic Dean are members ex-officio.

GRADUATE DEGREE PROGRAMS

MASTER OF ARTS

Programs leading to the degree of Master of Arts are offered in the following areas:

| | | |
|-----------|---------|------------|
| Biology | English | Humanities |
| Chemistry | History | |

MASTER OF ARTS IN TEACHING

Programs leading to the degree of Master of Arts in Teaching are offered in the following areas:

- Behavioral Sciences
- Biology
- Chemical Sciences
- Communication Arts and Sciences (Communication and Theatre)
- Creative Arts (Art, Music, Communication Arts and Sciences)
- Earth Sciences
- English
- Foreign Languages
- Geography
- History
- Humanities (English, Foreign Languages, Philosophy)
- Mathematics
- Physical Sciences
- Physics
- Social Sciences (Economics, History, Political Science)

MASTER OF EDUCATION

Programs leading to the degree of Master of Education are offered in the following areas:

- Elementary Education
- Elementary School Mathematics
- Guidance
- Health Education
- Instructional Media
- Reading
- School Administration
- School Librarianship
- Special Education
- Special Education — Learning Disabilities

MASTER OF SCIENCE

A program leading to the degree of Master of Science is offered in the following area:
Physical Education

ADMISSIONS

An application is not complete, and no applicant will be considered for admission, unless all of the documents outlined below have been received by the Dean of the Graduate School (and a departmental interview held, if required) on or before the appropriate application deadline indicated in the College Calendar in this Catalogue. It is the responsibility of the student to make certain that all application documents are received in time. Completed applications received after a deadline will be considered at the next admission date.

APPLICATION

The Graduate School admits students in November and May of each year. Students seeking admission to a program leading to a master's degree must hold a bachelor's degree from a four-year institution of acceptable standing. College seniors may be admitted on a conditional basis.

Applicants should specify the degree program (and also the area of concentration) when they request application forms. The Graduate School cannot send the appropriate application forms without this information. Any student who has filed material for admission to a given degree program or area of concentration, and subsequently decides to apply for admission to another program or area of concentration must submit new application forms, new letters of reference appropriate to the proposed degree program, and advanced test scores of the Graduate Record Examination, if necessary. Such changes must be submitted prior to the deadline for receiving completed applications specified in the College Calendar.

All students seeking admission to a Master of Arts program, Master of Science program, and certain Master of Arts in Teaching and Master of Education programs (see departmental requirements) are required to have a formal interview with the chairperson of the appropriate department prior to the deadline for submitting applications. Voluntary interviews will be scheduled for those who elect to have them; applicants should contact the appropriate department.

Applicants to the Graduate School should make certain that the following are on file in the Office of the Graduate School:

- 1. A formal application.**

Application forms may be obtained from the Graduate Office.

- 2. Three letters of recommendation.**

These letters indicate an estimate of the applicant's ability to pursue successfully a graduate program in his proposed field of concentration. For M.A.T. and M.Ed. applicants at least two letters must be from faculty who have taught the applicant at the collegiate level (undergraduate or graduate). The third letter may be from a school administrator under whom the applicant has taught. Applicants who received the bachelor's degree more than five years prior to completing their application, may substitute other appropriate references if approved beforehand by the Graduate School. For M.A. and M.S. applicants at least two letters must be from persons who have taught the applicant in the appropriate area of concentration. The third M.A. letter may be from any faculty member who has taught the applicant at the collegiate level, while the third M.S. letter may be from any faculty

member who has taught the applicant at the collegiate level or from a school administrator for whom the applicant has taught. Applicants for either the M.A. or M.S. who received the bachelor's degree more than five years prior to completing their application, may substitute other appropriate references if approved beforehand by the Graduate School. Forms for recommendations are available at the Graduate Office. Only recommendations submitted on this form and sent by the reference directly to the Graduate School will be accepted.

3. The results of the Aptitude Test of the Graduate Record Examination.

Applicants must arrange to have scores sent from the Educational Testing Service directly to the Dean of the Graduate School. Photocopies of scores and scores submitted by the applicant are not acceptable. Application forms and information relative to the Graduate Record Examinations may be obtained from the Graduate Office. Since up to six weeks may elapse between the test date and the receipt of scores, applicants should take the test well in advance of the Graduate School's deadline for receipt of completed applications. In addition, applicants for a Master of Arts program must submit the appropriate advanced test score. All applicants from countries where English is not an official language, must also submit scores on Educational Testing Service's Test of English as a Foreign Language (TOEFL) examination.

All students must submit the results of their Graduate Record Examinations. In addition, students may submit Miller Analogies Test scores. Information relative to the Miller Analogies Test may be obtained by contacting the Graduate Office.

4. Two copies of the applicant's Official Undergraduate Transcript.

All transcripts must bear the seal of the college. Applicants who have attended more than one undergraduate college, or who have completed course work beyond the bachelor's degree, should arrange to have duplicate transcripts of all course work sent directly to the Dean of the Graduate School. All transcripts must be sent by the college registrar directly to the Dean of the Graduate School. Graduates of Bridgewater State College should request the College Registrar to send transcripts to the Graduate Office. Applicants currently enrolled in the Division of Continuing Education should request the Division to send their transcripts to the Graduate Office.

5. Additional Departmental Requirements.

There may also be special departmental requirements relative to the application. Such requirements, if any, are to be found under the description of departmental requirements in this catalogue.

Applicants who have successfully completed graduate courses, as well as those who hold a degree(s) in addition to the baccalaureate, must fulfill all application requirements as set forth in this catalogue.

All correspondence and application material should be sent to the following address: Dean of the Graduate School, Rm. 211, Science Building, Bridgewater State College, Bridgewater, Massachusetts 02324.

One month prior to each deadline for admission a notice will be sent to applicants listing the documents which have not been received. Applicants will be notified when their application folders are complete. All transcripts and other documents submitted become the property of the Graduate School and will not be returned. Copies of transcripts and other documents will not be issued from the Graduate School Office.

ACTION BY THE DEPARTMENT

The Dean of the Graduate School sends all completed applications to the academic department in which the applicant proposes to take his or her concentration. After reviewing these applications, departments make their recommendations to the Graduate School.

Departments may recommend:

1. That the applicant be admitted to the Graduate School. Graduate students accepted with course deficiencies will be required to take prescribed undergraduate and/or graduate work without credit toward the degree.
2. That the applicant be admitted conditionally, pending the awarding of a baccalaureate. A college senior who is admitted to the program on a conditional basis should request his or her college to forward complete baccalaureate transcripts as soon as possible.
3. That the applicant not be admitted.

The successful completion of graduate courses prior to application shall not obligate the academic department or the Graduate School to recommend an applicant for acceptance.

ACTION BY THE DEAN OF THE GRADUATE SCHOOL

The Dean, after reviewing the recommendations of the academic department, notifies the applicant of the action taken. This notification will be mailed in early December and late May to November and May applicants respectively.

PROGRAM ADVISOR

Each student who is accepted will be assigned an advisor from the area of special interest. The Graduate School also sends the student and advisor copies of the form Record of Graduate Program. It is important that students contact their advisor at the College and make an appointment for planning their program. Students should bring their copy of the Record of Graduate Program to every conference with their advisor. The advisor's copy is sent to the Graduate School when the student applies for the degree. Program planning conferences should be arranged well in advance of each term, e.g., in May for courses offered during the summer and fall terms, and in November for courses offered during the spring term.

Conferences with advisors may be difficult to arrange during holidays and vacations, and between the close of summer session and registration for the fall term. During these times, all communication should be by mail or telephone.

CHANGES IN PROGRAM

Any request for a change in degree program must be made prior to the deadline for receiving completed applications as indicated in the College Calendar. Students wishing to change programs must: 1) file a new application; 2) submit new references appropriate to the proposed program; 3) submit any additional material appropriate to the new program; and 4) arrange for an interview, if required. Credits earned in one degree program may be transferred to another degree program with the approval of the new advisor.

CHANGE OF NAME AND/OR ADDRESS

Students should notify the Office of the Graduate School immediately, by using the appropriate form, Change of Name and/or Address, of any change in name or address. Failure to do this may cause unfortunate complications and delays which inconvenience students. Forms are available at the Office of the Graduate School.

WITHDRAWAL FROM PROGRAM

Students who decide to withdraw from a degree program should notify the Graduate School of their intentions in writing as soon as possible. (Students should also consult course withdrawal procedures and refund policies indicated in this catalogue.)

GENERAL POLICIES and PROCEDURES

Students are responsible for all information given in the latest edition of the Catalogue and also for any notices posted on the bulletin boards of the Graduate School, the Division of Continuing Education, the Library, and the academic departments.

No deviations from any graduate regulations are permissible unless they are approved by the Graduate Council and the Dean of the Graduate School.

DEADLINES

Students are reminded to consult the annual College Calendar for deadlines and dates relative to such matters as: admission, Graduate Record Examinations, comprehensive examination requests, approval of transfer credit, and filing applications for degrees. This Calendar is printed in the front of this catalogue.

TIME LIMITS

All requirements for the degree must be completed within six years from the date of the student's acceptance. No graduate course offered for the degree may be more than six years old at the time degree requirements are completed.

REGISTRATION

Graduate work is offered through both the Division of Continuing Education and the Day Session on either a full-time or part-time basis. All students who have been accepted in a degree program and who plan to enroll in course work offered through Continuing Education should preregister by mail. A registration form for each course must be obtained from the Division of Continuing Education. All students who plan to enroll in course work offered through the Day Session should contact the Graduate School Office for specific registration information well in advance of the beginning of the term. A registration card must be completed by the student and approved by the Assistant to the Dean of the Graduate School prior to being submitted by the student at registration.

Full-time graduate study is defined, for academic purposes only, as being enrolled for nine or more graduate credits in a given term in the Day Session and/or Continuing Education. Part-time graduate study is defined, for academic purposes only, as being enrolled for less than nine graduate credits in a given term in the Day Session and/or Continuing Education. Ordinarily, students should not register for more than twelve undergraduate and/or graduate credits during the fall or spring term. Graduate students may not register for more than two courses (6-8 credits) during each summer session. Any graduate student who earns more than the permitted number of credits allowed in a given term or summer session may not apply more than the permitted maximum number of credits toward the degree.

Students who complete courses at the Hyannis Summer Session should request the Director of the Session to forward transcripts to the Office of the Graduate School.

DEPARTMENTAL PREREQUISITES

Departmental prerequisites may be required to ensure adequate preparation for graduate work in the area of concentration. Departmental prerequisites may be fulfilled after

the applicant's acceptance by the Graduate School. Certain advanced courses require that students have completed specific prerequisites.

GRADING SYSTEM

Graduate course achievement will be rated A (Excellent), B (Good), C (Poor but passing), F (Failure), W (Withdrawn), INC (Incomplete), or AU (Audit).

ACADEMIC DISMISSAL

Students who earn grades of C or below in more than two graduate courses (i.e., any course in which the student enrolls for graduate credit after acceptance in a degree program) must withdraw from the program unless special permission to continue is recommended by the advisor, the Graduate Council, and the Dean of the Graduate School.

GRADUATE AND UNDERGRADUATE CREDIT

The level of credit earned in a course must be that designated by the student at the time of registration. Requests for credit level changes must be received prior to the beginning of the fourth meeting of a class. (For Day Session courses, requests for credit level change must be received prior to the beginning of the fourth week of the semester.) Ordinarily, a student who has not completed all requirements for the baccalaureate may not enroll in any course for graduate credit. (Seniors at Bridgewater State College in their last semester of course work may be permitted, with the approval of the undergraduate advisor and the Graduate Council, to enroll in courses for graduate credit.)

TRANSFER CREDIT

A student who has taken appropriate courses at Bridgewater or at another institution prior to acceptance by the Graduate School may request that up to fifteen graduate credits (including any credits earned in courses in which he or she is enrolled at the time of acceptance) be accepted in partial fulfillment of degree requirements. These credits must have been earned in courses designated by the department as appropriate to the student's degree program and must receive the approval of the student's advisor. Approval is subject to the following conditions: 1) that not more than six of the fifteen credits being transferred are from an approved institution other than Bridgewater State College (with the exception of sister institutions in the Massachusetts State College System, as explained below); and 2) that a grade of B or better has been earned in all courses completed prior to the student's acceptance by the Graduate School. A form entitled Petition for Acceptance of Transfer Credit should be obtained by the student from the Graduate School Office. If such credit is to be applied toward fulfillment of requirements for a master's degree, the student must submit the above form no later than the deadline indicated in the College Calendar. It should be noted that all transfer courses are subject to the regulation governing time limits. (No graduate course offered for the degree may be more than six years old when degree requirements are completed.)

After acceptance, a maximum of six graduate credits of grade B or better, taken at an approved graduate school other than Bridgewater State College, may be transferred if approved by the advisor. In no case, however, may more than a total of six appropriate credits be transferred from other graduate schools (with the exception of sister institutions in the Massachusetts State College System, as explained below). Two transcripts of courses taken at another institution after acceptance must be sent directly to the Bridgewater State College Graduate School.

All courses to be used for degree credit must have the approval of the advisor and be recorded on the Record of Graduate Program.

TRANSFER CREDIT — MASSACHUSETTS STATE COLLEGES

The Graduate School at Bridgewater State College and the sister institutions of the Massachusetts State College System have entered into an agreement which permits the transfer to Bridgewater master's degree programs of up to twelve appropriate graduate credits earned at the sister institutions. Students who have been accepted in a master's degree program at Bridgewater should obtain their advisor's approval of courses prior to registration. Students who anticipate applying for admission to a master's degree program should obtain course approval prior to registration from the appropriate departmental chairperson at Bridgewater. Students who register in graduate courses at another Massachusetts State College and who plan to request transfer of graduate credit to a Bridgewater degree program are subject to all academic standards and requirements of the Graduate School.

INDEPENDENT STUDY

Each Department's graduate offerings include two courses in which a graduate student who has been accepted in a degree program and who meets the course prerequisites can pursue independent study under the direction of a faculty member.

— 502 Research

Credit to be arranged

Original research undertaken by the graduate student in his or her field. The student's investigations ordinarily culminate in a thesis. The number of credits awarded for the research may vary, and the student may repeat the course until a maximum of 9 credits in an M.A. program and 6 credits in an M.A.T., M.Ed., or M.S. program is earned.

Degree program graduate students who wish to enroll in Research must complete and file with the Graduate Office the Graduate School form Approval of Thesis Topic and Outline.

— 503 Directed Study

Credit to be arranged

This course is designed for the graduate student who desires to study selected topics in his or her field. The number of credits awarded for Directed Study may vary, and the student may repeat the course until a maximum of 6 credits is earned.

Students who wish to enroll in Directed Study should obtain the form Request for Directed Study at the Graduate School Office. The completed form should be presented at registration.

Enrollment in Directed Study is limited to students who have been accepted to a master's degree program at Bridgewater State College and who have completed a minimum of 15 approved graduate credits.

THESIS

All M.A. students, and those M.Ed., M.A.T., and M.S. students who elect to submit a thesis, should obtain a copy of the brochure entitled *The Master's Thesis* from the Office of the Graduate School.

The major function of the thesis is to contribute to the student's scholarly development. In seeking approval of a thesis topic, the student is expected to demonstrate to those whose approval is required that the topic is significant and that execution of the work will further his or her educational growth. Each graduate student should confer with his or her advisor at the earliest opportunity relative to the thesis topic and outline. It is essential that the student work closely with the advisor in all matters related to the thesis.

The student's thesis committee is comprised of at least three faculty members, including a thesis committee chairperson, appointed by the departmental chairperson. All thesis committee appointments should follow consultation with the student's advisor and the student.

It is the responsibility of the student to obtain three copies of the form Approval of Thesis Topic and Outline and submit the completed copies (original and two carbons) to the advisor for approval by the members of the Thesis Committee. The forms may be obtained at the Office of the Graduate School. The student's advisor should retain the original copy of the completed form and should return the two carbon copies to the student. The student retains one copy for his or her records and submits the other to the Office of the Graduate School. (If the student, with the approval of the advisor, changes the thesis topic, revised copies of the above form must be filed in the Office of the Graduate School.)

Students should refer to the course entitled Research which appears in this catalogue under their major department and in this section under Independent Study, as well as consult with their advisor, relative to the matter of earning credit for research done in conjunction with a thesis. Students must be enrolled in Research during any period in which a faculty member is directing the thesis.

Three unbound copies of the thesis must be deposited in the Office of the Graduate School no later than the completion of all other degree requirements. Each copy must contain an abstract of the thesis, with the abstract immediately following the title page of the thesis. The Office of the Graduate School arranges for the binding of theses. A fee of \$7.50 per copy is charged.

COMPREHENSIVE EXAMINATION

While students are expected to make satisfactory progress in their course work, the accumulation of credit hours is not regarded as the sole index of progress or as a guarantee that the degree will be granted. Students must give evidence that they can integrate information and ideas from the various areas in which they are studying. The principal instrument for measuring this achievement is the Comprehensive Examination. This examination may be written and/or oral, as determined by the student's department. It is based upon the area of concentration, as well as related fields, and may include work done on the thesis. A student who plans to take the Comprehensive Examination should file the form entitled Examination Request. This form should be completed and filed by the student in the Graduate Office no later than the deadline indicated in the College Calendar. This examination may not be taken prior to the last term of course work.

Students who fail the Comprehensive Examination shall be given one further opportunity to take it after they have made substantial progress in whatever additional work may be prescribed by the advisor. The second Comprehensive Examination may not be taken prior to the next official examination period.

Students must file a new Examination Request form prior to the next applicable deadline indicated in the College Calendar. Those who take the Comprehensive Examination will be notified of the results by mail.

APPLICATION FOR DEGREE

Students who are nearing the completion of their degree requirements and who plan to receive a master's degree in February, May, or August, should request the form Application for Degree from the Graduate Office. This form should be completed by the student and filed, together with the faculty advisor's signed copy of the candidate's Record of Graduate Program, in the Graduate School Office no later than the deadline indicated in the College Calendar. Failure to file before the deadline will postpone degree conferral. A Commencement Fee of \$11.00 (plus a fee of \$14.75 for academic regalia for students attending commencement exercises) is required at the time of filing the Application for Degree.

No degree will be conferred and no degree transcripts will be issued unless all tuition and fees have been paid in full.

Diplomas are awarded at the May Commencement and also during the months of February and August. Students who receive their diplomas in February or August, as well as those who complete their degree work in May, should plan to attend the May Commencement and wear appropriate academic regalia. Information relative to Commencement is mailed in early May.

In the event that a student does not receive the degree at the anticipated time, a new Application for Degree form must be filed prior to the next applicable deadline indicated in the College Calendar.

GRADUATE DEGREE REQUIREMENTS

MASTER OF ARTS

General and Departmental Requirements

General requirements for the Master of Arts degree shall be a minimum of thirty approved graduate credits, including a thesis approved by the department. All credits must be derived from courses designated by the department as appropriate to the student's degree program and must have the endorsement of the advisor. The thesis should include results of original research and give evidence of high scholarship. Unless otherwise indicated by the major department, a maximum of nine of the thirty approved graduate credits may be allowed for the thesis. Each student must enroll in the research course (—502) listed under the major department. Students should consult the sections in this Catalogue entitled Thesis and Independent Study, and request the brochure entitled The Master's Thesis from the Graduate School Office. Ordinarily, at least one-half of the degree credits should be earned in courses limited to graduate students (500 level).

Preliminary Examination

Ordinarily, a Preliminary Examination is given during the semester following the successful completion of twelve credits (including transfer credits) of approved graduate work. This examination may be written and/or oral. Its purposes are: 1) to determine the degree of skill achieved in relating and integrating graduate work completed to date; 2) to ascertain the readiness of the student for additional graduate work; and 3) to enable the advisor to plan the remainder of the student's program. The Graduate School will apprise students of their performance on the Preliminary Examination. Unsatisfactory performance may require additional course work and a second examination. If a student fails to perform satisfactorily a second time, he or she will be dropped from the degree program.

Foreign Language Examination

A reading knowledge of one foreign language, specified by the major department, is required. Students should consult with their advisor relative to departmental language requirements and procedures for taking the examination.

The results of this examination are submitted to the Graduate School by the advisor on the form entitled Examination Results.

Comprehensive Examination

All students are required to pass a comprehensive examination. (See the section of this catalogue on Comprehensive Examination.)

MASTER OF ARTS IN TEACHING

General and Departmental Requirements

General requirements for the M.A.T. degree, which is offered through the Department of Secondary Education and the Academic Departments and Divisions of the College, shall be a minimum of thirty approved graduate credits, unless otherwise indicated by the departments. Students should consult the appropriate departmental sections of this catalogue. Degree credits must be derived from courses designated by the departments as appropriate to the student's degree program and must have the endorsement of the advisor. A thesis is optional in Master of Arts in Teaching programs. A maximum of six credits may be earned in conjunction with a thesis. The student's work should include

results of original research and give evidence of high scholarship. Each student who elects to do a thesis should enroll in the research course (— 502) listed in the major department. Students should consult the sections of the catalogue entitled Thesis and Independent Study, and request the brochure entitled The Master's Thesis from the Graduate School Office. Ordinarily, at least one-half of the degree credits should be earned in courses limited to graduate students (500 level).

Elective Courses

The degree of Master of Arts in Teaching is designed primarily to meet the varied needs of graduate students who are currently teaching or intend to teach at the secondary school or community/junior college level. Emphasis is placed upon providing appropriate breadth and depth in the student's field of interest as well as in professional education. The balance between courses in professional education and the subject field is determined by the student's background.

At the time of acceptance students will be assigned an advisor from the academic area in which they are concentrating and an advisor from the Department of Secondary Education. All electives in professional education to be taken for degree credit should be approved by the student's advisor in the Department of Secondary Education prior to registration. All electives in the academic area of concentration should be approved by the student's advisor in that academic area prior to registration. Students not yet accepted to an M.A.T. program should consult with the chairpersons of secondary education and the appropriate academic area for course selection advice and approval.

Each student, in consultation with advisors, elects courses which meet his or her professional needs. Ordinarily, at least 18 graduate credits should be elected from the academic area (and related areas) in which the student is concentrating. In addition, at least one course should be elected from each of the following areas of professional study:

RESEARCH METHODS AND FINDINGS

- GC 500 Research and Evaluation
- ED 591 Research in the Classroom Teaching of Language Arts
- ED 592 Research in the Classroom Teaching of Social Sciences
- ED 593 Research in the Classroom Teaching of Mathematics
- ED 594 Research in the Classroom Teaching of Science

HUMANISTIC STUDIES

- ED 310 Aims and Philosophy of Secondary Education
- ED 382 Comparative Education
- ED 383 International Education
- ED 480 Philosophy of Education
- ED 505 Historical Foundations of Education
- ED 580 Philosophical Foundations of Education
- ED 583 Directed study in the Philosophy of Education

BEHAVIORAL STUDIES

- ED 520 Psychological Foundations of Education
- ED 523 Directed Study in Educational Psychology
- ED 590 Sociological Foundations of Education

TEACHING THEORY

- ED 312 Strategies for Teaching Social Studies in the Secondary School
- ED 314 Strategies for Teaching English in the Secondary School
- ED 316 Strategies for Teaching Earth Science in the Secondary School

- ED 317 Strategies for Teaching Geography in the Secondary School
- ED 319 Strategies for Teaching Physical Science in the Secondary School
- ED 320 Strategies for Teaching Biology in the Secondary School
- ED 322 Strategies for Teaching Mathematics in the Secondary School
- ED 324 Strategies for Teaching Foreign Language in the Secondary School
- ED 325 Strategies for Teaching Art in the Secondary School
- ED 326 Strategies for Teaching Speech in the Secondary School
- ED 440 Methods and Materials in Secondary Education
- ED 443 Secondary School Curriculum
- SA 571 Introduction to Theory and Understanding of Group Interaction

Teaching Requirement

All students enrolled in a program leading to the degree of Master of Arts in Teaching are required to fulfill the degree requirement of teaching experience. This requirement may be met, unless otherwise indicated in this catalogue under the departments in which the student is concentrating, by one of the following procedures:

1. **TEACHING EXPERIENCE.** One full semester of successful classroom teaching experience at the appropriate level as a full-time employee in an accredited public or private school. (Students should submit the Graduate School form Certificate of Teaching.)
2. **STUDENT TEACHING.** A minimum of 6 credits of student teaching earned at an institution of acceptable standing prior to or after acceptance in a master's degree program at Bridgewater State College. This experience may have been at either the undergraduate or graduate level. Credits earned in conjunction with student teaching may not be used to meet the minimum graduate credit requirements for the degree.

Those who plan to student teach through Bridgewater State College after acceptance should familiarize themselves with the policies regarding Admission to the Teacher Education Program (see the Division of Professional Education's statement in this catalogue). Students should meet the prerequisites for the student teaching course most appropriate to their program, i.e., ED 490 Supervised Teaching in the Public Schools-Secondary, or SE 491 Supervised Teaching in the Public Schools-Special Education, or EE 492 Supervised Teaching in the Public Schools-Elementary. (See the Departments of Secondary Education, Educational Services, or Elementary Education.) Students must request the Graduate School to certify their eligibility by letter to the Director of Teacher Preparation and Placement. The student must register for supervised teaching through the Registrar's Office after the application for student teaching has been approved.

3. **CERTIFICATION:** The possession of an appropriate teacher certificate issued by the Department of Education of the Commonwealth of Massachusetts.

Comprehensive Examination

All students are required to pass a comprehensive examination. (See the section of this catalogue entitled Comprehensive Examination.)

Certification Information

Teacher certification is granted by the Massachusetts State Department of Education. Students who wish to be certified in the Commonwealth should direct their inquiries to the Director of Teacher Certification, Department of Education, 182 Tremont Street, Boston,

Mass. 02111. Students should consult with their Secondary Education advisor if they wish to meet State certification requirements while they are enrolled in a M.A.T. program.

MASTER OF EDUCATION

General and Departmental Requirements

General requirements for the degree shall be a minimum of thirty approved graduate credits, unless otherwise indicated by the department. Students should consult the appropriate departmental section of this catalogue. Degree credits must be derived from courses designated by the department as appropriate to the student's degree program and must have the endorsement of the advisor. A thesis is optional in most Master of Education programs. A maximum of six credits may be earned in conjunction with a thesis. The student's work should include results of original research and given evidence of high scholarship. Each student who elects to do a thesis should enroll in the research course (—502) listed under his major department. Students should consult the section of the catalogue entitled Thesis and Independent Study and request the brochure entitled The Master's Thesis from the Graduate School Office. Ordinarily, at least one-half of the degree credits should be earned in courses limited to graduate students (500 level).

Required and Elective Courses

Each program leading to the degree of Master of Education provides graduate students with a curriculum designed to meet their professional needs. In addition to coursework in the area of specialization and related fields, each student must elect at least one course from each of the following areas of professional study:

RESEARCH METHODS AND FINDINGS

Specific course requirements for this area of study are listed under the various departmental M.Ed. program descriptions.

HUMANISTIC STUDIES

- ED 382 Comparative Education
- ED 383 International Education
- ED 480 Philosophy of Education
- ED 505 Historical Foundations of Education
- ED 580 Philosophical Foundations of Education
- ED 583 Directed Study in the Philosophy of Education

BEHAVIORAL STUDIES

- ED 520 Psychological Foundations of Education
- ED 523 Directed Study in Educational Psychology
- ED 590 Sociological Foundations of Education

Additional M.Ed. course requirements are listed under the various departmental program descriptions in this catalogue. All courses to be offered in fulfillment of degree requirements must be approved by the student's advisor.

Teaching Requirement

All students enrolled in a program leading to the degree of Master of Education ordinarily are required to fulfill the degree prerequisite of teaching experience. This requirement may be met, unless otherwise indicated in this catalogue under the department in which the student is concentrating, by one of the following procedures:

1. **TEACHING EXPERIENCE.** One full semester of successful classroom teaching experience at the appropriate level as a full-time employee in an accredited public or private school. (Students should submit the Graduate School form Certificate of Teaching.)
2. **STUDENT TEACHING.** A minimum of 6 credits of student teaching earned at an institution of acceptable standing prior to or after acceptance in a master's degree program at Bridgewater State College. This experience may have been at either the undergraduate or graduate level. Credits earned in conjunction with student teaching may not be used to meet the minimum graduate credit requirements for the degree.

Those who plan to student teach through Bridgewater State College after acceptance should familiarize themselves with the policies regarding Admission to the Teacher Education Program (see the Division of Professional Education's statement in this catalogue). Students should meet the prerequisites for the student teaching course most appropriate to their program, i.e., ED 490 Supervised Teaching in the Public Schools-Secondary, or SE 491 Supervised Teaching in the Public Schools-Special Education, or EE 492 Supervised Teaching in the Public Schools-Elementary. (See the Departments of Secondary Education, Educational Services, or Elementary Education.) Students must request the Graduate School to certify their eligibility by letter to the Director of Teacher Preparation and Placement. The student must register for supervised teaching through the Registrar's Office after his application for student teaching has been approved.

3. **CERTIFICATION:** The possession of a certificate appropriate to the student's area of specialization issued by the Department of Education of the Commonwealth of Massachusetts.

Comprehensive Examination

All students are required to pass a comprehensive examination. (See the section of this catalogue entitled Comprehensive Examination.)

Certification Information

Certification is granted by the Massachusetts State Department of Education. Students who wish to be certified in the Commonwealth should direct their inquiries to the appropriate Division of the Department of Education, 182 Tremont Street, Boston, Massachusetts 02111. Students should consult with their advisor if they wish to meet State certification requirements while they are enrolled in a M.Ed. program.

MASTER OF SCIENCE

General and Departmental Requirements

At present the degree of Master of Science is offered only in the field of Physical Education. For information regarding this degree, consult the requirements outlined under the Department of Health and Physical Education.

Program & Course Offerings

GENERAL INFORMATION

The following section presents the academic divisions of the College and their departments. Each department's undergraduate and graduate programs are outlined, together with a listing of its course offerings.

The course offerings include all courses which are taught at the College — both through the Day Session and the Division of Continuing Education. Certain courses in various departments are offered only in the Day Session, while others are offered only through the Division of Continuing Education. At present, the large majority of the 500 level courses are offered only through the Division of Continuing Education. Students are urged to consult the Day Session's Schedule of Courses and the Division of Continuing Education's brochure each semester to see when specific courses are offered.

Students should consult the Undergraduate or Graduate sections of this catalogue for information on academic regulations applicable to their degree.

Regulations concerning the refund policy for tuition and fees are found in the section of this Catalogue entitled Tuition and Fees.

COURSE NUMBERING SYSTEM

- 100 - 299 Introductory courses or courses normally taken in the freshman and sophomore years.
- 300 - 399 Courses normally taken in the junior or senior years — open to graduate students unless otherwise noted.
- 400 - 499 Courses normally taken by seniors — open to graduate students unless otherwise noted.
- 500 - 599 Open only to graduate students.

Courses which may not be used by graduate students to fulfill master's degree requirements are indicated as part of each graduate program description.

Usually, courses offered in the fall semester are odd-numbered; those offered in the spring semester are even numbered. Courses offered both semesters usually end in zero.

PREREQUISITES

Students should make certain that they have the necessary prerequisites for each course. Failure to do so may result in being inadequately prepared to take the course, and may result in the loss of any credit earned in the course. Prerequisites are indicated after the abbreviation "Prq." in each course description.

MEETING TIMES

Unless specified otherwise, Day Session courses meet for three 50-minute periods or two 75-minute periods per week for one semester, and count for three credits. Departures from this rule, such as laboratory and studio periods and quarter courses, are indicated in the course descriptions and schedule of courses.

Courses offered through the Division of Continuing Education normally meet once a week for a three hour period. Exceptions are noted in the Division's brochure.

Division of Behavioral Sciences

Anthropology, Psychology, Sociology

Divisional Director: Professor Morgan Brown

Undergraduate programs of study within the Division of Behavioral Sciences are provided by the Departments of Anthropology, Psychology and Sociology.

Students within the Division receive intensive instruction in the scientific study of cultures, personality, individual and group behavior, and research techniques useful in anthropological, psychological, and sociological study.

Graduates of the Division of Behavioral Sciences find employment in social work and community service agencies, psychological clinics and related settings in urban areas. Some pursue graduate and professional training. Others engage in secondary school teaching.

The Division also offers a program leading to the degree of Master of Arts in Teaching with a concentration in behavioral sciences. This program is designed primarily for teachers and future teachers of behavioral sciences in the secondary schools.

Applicants for admission to the degree program must be interviewed prior to being considered for admission. Please contact the Director of the Division.

In addition to meeting general degree requirements, graduate students must complete the concentration requirement by electing courses appropriate to the degree program. All courses must be approved by the advisor. Courses which may be taken are listed under the several departments within the Division of Behavioral Sciences.

Department of Anthropology

Professor George Horner, Acting Chairperson
Associate Professor James Mueller
Assistant Professor Reed Stewart

UNDERGRADUATE PROGRAMS

Bachelor of Science/Bachelor of Arts

A Major in Anthropology provides students with an understanding of societies and cultures throughout the world. Specifically: 1) A major prepares students for teaching careers in either elementary or secondary schools and/or college teaching or research. 2) It prepares students for careers in industry. 3) It offers a general background to students who are interested in jobs with state or federal agencies. 4) It provides a background for students to become educated, well informed adults. Majors are encouraged to continue study for advanced degrees (M.A. or Ph.D.) because those individuals are more likely to be selected for positions in the field.

Within the field of Anthropology, majors can concentrate in Archaeology, Physical Anthropology or Cultural Anthropology.

Anthropology Major

AN 201, plus a minimum of seven other Anthropology courses.

MA 110 or 190; BI 101-102 or ES 100, GE 100 or ES 101

A one-year sequence of foreign language study at the intermediate level, or its equivalent.

Anthropology Minor

AN 201, plus five other Anthropology courses.

GRADUATE PROGRAM

Master of Arts in Teaching

The Department of Anthropology does not offer a program at the master's degree level at this time. Anthropology courses may be taken, with faculty advisor approval, in a program leading to the degree of Master of Arts in Teaching with a concentration in the behavioral sciences. For students taking this degree, it is advisable that one of the courses in Anthropology be AN 323 Seminar: Anthropological Theory, to help prepare for the comprehensive examination.

Additional information regarding this degree may be found in the Graduate School section of this catalogue as well as under the Division of the Behavioral Sciences.

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.A.T. degree requirements: AN 201, AN 202, AN 210, and AN 499.

COURSE OFFERINGS*

AN 201 General Anthropology

3 crs.

Origin of man. Physical evolution of man. Divisions of anthropology, cultural history and development. Basic concepts and methods of analyzing cultures.

AN 202 Studies in Selected Cultures

3 crs.

Science of human behavior in different cultural contexts. Man's biological and cultural variability; human societies of the present and recent past around the world; dynamics of cultural change.

AN 205 Culture Change

3 crs.

Use of the inductive approach to examine the effect of culture on individuals and groups. Discussion and study of applied anthropological techniques used in planned programs to assist in adopting social change.

AN 207 Primitive Religion

3 crs.

The origins and development of religion in society; myth, ritual, magic, and religious specialists. Australian, African, and American Indian.

AN 210 Introduction to Folklore

3 crs.

The meaning and subdivisions of folklore: myth, folk tale, proverb, riddles. Analyses of story elements and major folklore areas.

AN 301 Introduction to Physical Anthropology

3 crs.

An introduction to the principles of Physical Anthropology as it relates to human evolution. Examinations of present evidence, in an attempt to discover the origin of man. Such aspects of progress in homeostasis, primate radiation, body structure and posture, feeding ecology and behavior, evolution of the head, and reproduction.

AN 302 Introduction to Archaeology

3 crs.

Examination of field methods, systems of data recording, analytical methods, and their conceptual basis. Abstract theory closely integrated with specific case material. Laboratory exercises in application of artifact analysis.

AN 304 Personality and Culture

3 crs.

A study of the interrelationships between individual and society, focusing on 1) major theories about the formulation of personality by the surrounding structures, including Freudian theory and the Marxist concept of alienation; 2) a cross-cultural study of childhood; 3) adolescence in changing America; 4) several conceptions about the contemporary American personality as compared with personality structures in traditional society.

AN 306 Indians of North America

3 crs.

A study of tribal cultures representative of most of the cultures areas Mexico, Canada, and the United States. Emphasis will be placed on the current state of Indians and on governmental policies and attitudes.

AN 307 Seminar: Urban Cultural Dynamics

3 crs.

Prq.: Consent of the Instructor.

A study of poverty, urban renewal, and the experience of the ghetto, crime, family disintegration, problems of housing and transportation, and proposed solutions to the crisis of the inner city. Wherever possible emphasis will be upon Boston.

AN 310 Peoples and Cultures of Africa South of the Sahara

3 crs.

A survey of present cultures of tropical and subtropical Africa, problems of colonialism, acculturation, new nationalism, and rapid social change.

AN 321 Comparative Social Structures

3 crs.

A comparison of social structures of selected non-western societies. Stress is placed upon the meaning of society, structure, and methods of comparison.

*See page 50 for general information regarding course offerings.

AN 323 Seminar: Anthropological Theory

3 crs.

Prq.: Consent of the Instructor.

A survey of early schools of cultural theory including Adolf Bastian, Lewis Morgan, Edward B. Tylor, the British Diffusionists, the German Historical-Diffusionist School, French Sociology, Functionalism, including Franz Boas and Malinowski. Current functional evolutionary theory.

AN 327 Seminar: Urban Centers in East and West Africa

3 crs.

Major African cities and the culture of their hinterland focusing on cities like Nairobi, Kampala, Cairo, Kumasi, and Monrovia, and the role these cities play in shaping the lives of people in the surrounding territories. Alternate years.

AN 328 Archaeology of North America

3 crs.

Prq.: Consent of the Instructor.

A survey of some of the semi-historic and pre-historic Indian cultures in North America.

AN 329 Economic Anthropology

3 crs.

A study of the means of satisfying the needs of non-western non-industrialized and non-cash economies. Emphasis will be placed upon the concepts of wealth, ownership, capital and labor.

AN 402 Field Research

3 crs.

Prq.: Consent of the Instructor.

Methods of field work for cultural anthropologists working in ongoing societies; design of field studies; techniques for collection and analysis of empirical data; experimental field projects.

**AN 406 Archaeological Field Excavation, Survey and Research in
Prehistoric Village Sites in New England**

3 crs.

Prq.: Consent of the Instructor.

Intensive training in excavation techniques, recordation, analysis, and interpretation of archaeological materials. For students with a concentration in Earth Science. Offered summers only.

AN 499 Directed Study in Anthropology

1-3 crs.

Prq.: Consent of the Department

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

AN 502 Research

credit to be arranged

Prq.: Approval of the advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

AN 503 Directed Study

credit to be arranged

Prq.: Approval of the advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

Department of Psychology

Professor Richard E. Stafford, Chairperson

Professors: Herbert Greenwald, James Scroggs

Associate Professors: Drake Chisholm, Elizabeth Hollis, Louis Schippers

Assistant Professor: Susan Todd

Instructors: Margaret Johnson, David Richards

UNDERGRADUATE PROGRAM

Bachelor of Arts/Bachelor of Science

The objectives of the Department of Psychology are to 1) provide all students with an understanding of psychology and what psychologists do; 2) give students (where applicable) a background in psychology that will help them do their job better; 3) give our terminal majors sufficient training to enhance their opportunities for vocational placement in psychology-related occupations; 4) give our majors who intend to become professional psychologists, sufficient preparation to permit them to be competitive in achieving admission and success in graduate schools.

Psychology Major

PY 100, PY 252, PY 224 or PY 226, PY 310, PY 360 (PY 353 is optional but recommended for students contemplating graduate work), plus a minimum of five additional courses in psychology: MA 110, BI 101-102 or BI 103-104 or BI 105-106, or equivalent.

A one-year sequence of foreign language study at the intermediate level, or its equivalent.

GRADUATE PROGRAM

Master of Arts in Teaching

The Department of Psychology does not offer a program at the master's degree level at this time. Psychology courses may be taken, with faculty advisor approval, in a program leading to the degree of Master of Arts in Teaching with a concentration in the behavioral sciences.

Additional information regarding this degree may be found in the Graduate School section of this catalogue as well as under the Division of the Behavioral Sciences.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.A.T. degree requirements: All courses below the 300 level, PY 498, and PY 499.

COURSE OFFERINGS*

PY 100 Introductory Psychology (formerly PY 200)

3 crs.

A survey of the different psychological processes such as perception, sensation, learning, emotion, with a discussion of the underlying physiological processes as well as an introduction to the more complex areas such as personality development, psychopathology, social influences and testing. Methods of investigation and research will be integrated with the above topics.

PY 202 Quantitative Methods in Psychology

3 crs.

Prq.: PY 100, MA 110

The fundamentals of psychological research, with emphasis on quantitative methodology and the practical application of appropriate research techniques including: hypothesis testing, research reporting and experimental designs unique to psychology such as multivariate techniques, multiple regression, and factor analysis as well as psychological scaling.

PY 210 Applied Social Psychology

3 crs.

Prq.: PY 100 and either PY 310 or consent of the Instructor.

Effective communication and better understanding of oneself; listening, persuasion, conflict resolution, goals, expectations, and self-confidence. Contemporary problems such as dissent, minority problems. Guest speaker when possible.

PY 216 Psychology of Individual Differences

3 crs.

Prq.: BI 105, 106 or equivalent.

An introduction to the ex post facto method of research and its applications to the investigation of individuals and group differences in normal behavior. The relationship of aptitudes, personality, perception, values, etc. to age, birth order, gender, socio-economic class, and race will be studied. Topics range from the origin, development, and measurement of individual differences, to their applications in counseling, education, industry, and social work. Opportunity will be given for the student to learn about her or his individual differences.

PY 224 Child Psychology

3 crs.

Prq.: PY 100.

An investigation of the growth and development of the child from conception to pre-adolescence will include both the influence of heredity and other biological factors as well as the social influences of child rearing practices, family value systems, and peer culture effects. Topics will include the development of verbal ability, conscience and moral judgment, personality and self concept. Current theories and research findings will be discussed in relation to the above topics.

PY 225 Psychology of Infancy and Early Childhood

3 crs.

Prq.: PY 100.

An investigation of the growth and development of the child from the pre-natal period to the primary grades. Emphasis would be on motor skills as well as perceptual learning, cognitive behavior, socialization and emotional applications to representative problems.

PY 226 Adolescent Psychology

3 crs.

Prq.: PY 100

An investigation of the growth and development of the pre-adolescent and adolescent including both physical as well as psychological changes relating to intellectual, moral, emotional, personality and social aspects. Current theories and research findings will be discussed in relation to the above topics.

PY 240 Sensation and Perception

3 crs.

Prq.: PY 100.

The auditory, visual, gustatory, olfactory and cutaneous senses will be studied by presenting the basic data with their implications concerning functioning of these systems. The methods for collecting data and the theory concerning such phenomena as perception of movement, time, space, form, pattern and attention will be presented.

*See page 50 for general information regarding course offerings.

PY 251 Human Learning and Memory

3 crs.

Prq.: PY 100.

Applied psychological aspects of motor, skill, and perceptual learning as well as human verbal learning and memory will be explored. Experimental research will be reviewed along with studies of practical application.

PY 252 Psychology of Learning (formerly PY 222)

3 crs.

Prq.: PY 100.

The shaping of behavior, laboratory conditioning, reinforcement, approach and avoidance of a goal, discrimination and generalization of physical cues, animal learning experiments. Experimental approaches to the study of human behavior.

PY 300 Abnormal Psychology

3 crs.

Prq.: PY 100.

A systematic study of behavior pathology. Symptom patterns, etiology, prognosis, and prevention. Understanding and care of mental illness.

PY 303 Survey of Psychological Measurement

3 crs.

Prq.: MA 110.

An introduction to the theory of psychological measurement and test development including item indices, speededness, reliability, and validity with a survey of various psychological instruments used in assessment, in personnel selection, and in psychological research.

PY 304 Attitude and Personality Measurement

3 crs.

Prq.: PY 360, PY 310, and MA 110.

Principles of construction of attitude scales and personality assessment techniques, including both projective and inventory-type techniques. Issues and controversies in psychological measurement.

PY 308 Experimental Social Psychology

3 crs.

Prq.: PY 310 and MA 110.

Recent research including developments in methodology, theory, and research findings. Situational approaches and individual differences useful in testing theories and hypotheses in resolving conflicting findings of previous research. Research project required of the student.

PY 310 Social Psychology (formerly PY 230)

3 crs.

Prq.: PY 100.

The individual in social situations: attitude formation and change, culture and society, language and communication, leadership and group dynamics, personality characteristics and interpersonal relationships, small group behavior.

PY 312 Attitude Change Research

3 crs.

Prq.: PY 310 and MA 110.

Empirical research in persuasion; communicator credibility, opinion difference, commitment, one-sided (pro) and two-sided (pro and con) arguments, coercion, threat, emotional and rational arguments. Theories of attitude change, including dissonance theory, balance theory, congruity theory, and assimilation and contrast theory.

PY 313 Psychology of Organizations

3 crs.

Prq.: PY 100.

Theories and research, organizational objectives, systems analyses and efficiency planning, quality and quantity of productivity, morale, leadership, personnel selection, career development, committee effectiveness, evaluation research and use of other feedback techniques to improve functioning. Term project: analysis of an existing organization, with recommendations.

PY 319 History of Psychology

3 crs.

Prq.: At least 12 hours of psychology or permission of Instructor.

A study of the early recognition and historical trends in the study of psychology from the early Greeks through the Renaissance to the 19th and early 20th century schools of thought. Eminent psychologists and their contributions will be integrated with the historical perspective.

PY 324 Experimental Child Psychology

3 crs.

Prq.: PY 224 and MA 110.

Students will plan and conduct experiments related to childhood in some of the following areas: motor learning, perception, language acquisition, cognition, and personality development. Proper psychological experimental design will be emphasized.

PY 325 Cognitive Development

3 crs.

Prq.: PY 100 and PY 224.

The development of the cognitive processes, including perception, language, intelligence, and memory. The major focus will be on the growth of basic systems and strategies for representing information symbolically. The work of cognitive theorists such as Berlyne, Bruner, and Piaget will be considered.

PY 327 Psychology of Exceptional Children (formerly PY 227)

3 crs.

Prq.: PY 224 or PY 226 or permission of the Instructor.

This course will deal with the identification and understanding of children with special needs. Special techniques appropriate to helping these children will be treated. Emphasis will be placed on the psychological problems of the learning disabled, mentally, emotionally, and physically handicapped children as well as those of the academically gifted or creative child.

PY 328 Psychology of Mental Retardation (formerly PY 228)

3 crs.

Prq.: PY 224 or consent of Instructor.

Origins (genetic, organic, sensory, maternal, and cultural deprivation), manifestations, diagnostic aids, therapeutic and remedial techniques.

PY 329 Psychology of Aging

3 crs.

Prq.: PY 100.

A study of the sensory, cognitive and social changes resulting from old age including changes in learning, personality and pathology. Problems of adjustment will be discussed and integrated with research findings in gerontology.

PY 339 Human Information Processing

3 crs.

Prq.: At least 12 hours in psychology or permission of the Instructor.

The psychology of thinking including historical and philosophical issues; process models, information theory, cybernetic, general systems and field theory approaches, visual and auditory cognition, psycholinguistics, memory and attention, problem solving and concept formation, with implications for mental retardation and learning disabilities.

PY 342 Physiological Psychology

3 crs.

Prq.: BI 102 or equivalent and PY 100.

A general survey of the neural bases of behavior and current issues of physiological psychology. Topics include: instinctive behavior, biopsychological investigation of learning and motivation.

PY 343 Laboratory in Physiological Psychology

3 crs.

Prq.: BI 102 or equivalent and PY 100.

Skills in the laboratory technique used in biopsychology are developed. Topics include: animal neurosurgery, electro-physiological stimulation and recordings, and the effects of drugs upon behavior.

PY 350 Special Topics in Psychology

3 crs.

Prq.: At least nine hours in psychology or permission of Instructor.

Various special topics of current interest in psychology will be offered from time to time. Topics will be announced before pre-registration. May be taken more than once but only three credits will be counted towards the first 30 hours in the Psychology major.

PY 353 Laboratory in Experimental Psychology (formerly PY 223)

3 crs.

Prq.: PY 100 and PY 252.

Practical experience in laboratory approach to the study of behavior with considerable freedom for students to design his own experiments. Mainly oriented toward issues in learning and motivation: classical and operant conditioning, generalization and discrimination, extinction and transfer, goal-approach and avoidance, effect of drive on performance.

PY 355 Behavior Modification

3 crs.

Prq.: PY 100.

Survey of theoretical positions with research, education, clinical and correctional application of a broad spectrum of behavioral principles to the treatment, modification, amelioration, and prevention of behavior and/or learning problems. Although the primary emphasis will be on tactical considerations, the ethical aspects of such techniques will be discussed.

PY 360 Psychology of Personality (formerly PY 231)

3 crs.

Prq.: PY 100.

Basic concepts in the field of personality, organized around such topics as motivation, personality structure and dynamics, personality development, assessment, and therapy. Problems and styles of adjustments will be considered.

PY 369 Psychology of Criminal Behavior

3 crs.

Prq.: PY 100.

Definition of criminal behavior and the psychodynamics involved in its causality such as: child rearing practices, personality development, attitude formation, etc. The psychological aspects of punitive vs. rehabilitative incarceration, psychological intervention techniques including behavior modification, psychotherapy and psychodrama, will also be covered. An integration of theory with research findings will be maintained.

PY 415 Psychological Theory (formerly PY 315)

3 crs.

Prq.: At least 12 hours in psychology.

Fundamental assumptions underlying the psychological enterprise, and issues which are the subjects of continuing debate in the field — e.g., causality, determinism, methodological approaches, the control of behavior, conceptions of the nature of man.

PY 470 Clinical Psychology (formerly PY 310)

3 crs.

Prq.: PY 300 and PY 360.

Survey of diagnostic and treatment procedures and resources in clinical work with children and adults; professional skills and responsibilities of the clinical psychologist.

PY 472 Community Psychology and Mental Health (formerly PY 351)

3 crs.

Prq.: PY 300 and PY 360.

Examination of principles, literature, and practices of community mental health work and preventive psychiatry. Therapeutic methods in individual, couple, family and group work considered as well as the role of consultation and the community mental health center.

PY 490 Senior Seminar

3 crs.

Prq.: 18 hours in psychology or consent of the Instructor.

Topical areas of psychology will be offered to allow seniors an opportunity to make individual presentations and critique each other through discussions. Topics will be announced in advance. May be taken twice but only three credits will be credited toward the first 30 hours for psychology majors.

PY 497 Research*

1-3 crs.

Prq.: Consent of Department

Individual or group research project. Primarily for senior majors in psychology; others by special arrangement. May be taken twice for a maximum of six credits.

PY 498 Clinical Practicum*

3-15 crs.

Prq.: Consent of Department.

Open to seniors who wish to have the opportunity to gain first hand experience in applying psychology in a clinical setting.

PY 499 Directed Study in Psychology*

1-3 crs.

Prq.: Consent of the Department.

Open to juniors and seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

*No more than six hours of any combination PY 497, PY 498 or PY 499 may be counted towards the first 30 hours in the psychology requirements for a major.

PY 500 Advanced General Psychology

3 crs.

Prq.: Nine hours of psychology or permission of the Instructor.

An integration of the basic areas of psychology such as sensation, perception, learning, motivation as well as areas of normal and abnormal personality, cognitive processes and social influences on the individual's behavior.

PY 502 Research

credit to be arranged

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

PY 503 Directed Study

credit to be arranged

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

Department of Sociology

Professor Clay Greene, Chairperson
Professor Morgan Brown
Associate Professors: Lester Houston, Abraham Thomas
Assistant Professors: Jaime Calderon, William Levin
Instructor: Andrew Plotkin

UNDERGRADUATE PROGRAMS

Bachelor of Arts/Bachelor of Science

Human beings interact in several ways with other human beings and construct patterns of relationships, groups, classes, institutions, and societies. We are individuals but necessarily participate in and are shaped by the large number of relationships that constitute social reality. The sociological perspective focuses on these social relationships.

The objective of the Department of Sociology is to provide the student with an understanding of how these social relationships arise, why they persist, what effects they have, how they maintain social order or contribute to social change. The Department provides this understanding by means of classroom learning of the theories and methods of research used by the practitioners of sociology and by internship practices in the field, where the student is expected to apply or deepen classroom learning. This objective is designed with the hope that it will facilitate the student's entrance into the labor market or graduate school.

Sociology Major

SO 202, SO 400, SO 402 plus a minimum of seven other courses in Sociology.
MA 110

Sociology Minor

18 credits in Sociology as recommended by the department.

Social Work Track

This track within the Sociology major is available to students interested in pursuing a career in Social Work, and is designed to prepare graduates for a beginning job in the profession.

SO 202, SO 302, SO 309, SO 311, SO 314 or SO 324 or SO 325, SO 400, SO 402, SO 409, SO 410, SO 498.
MA 110

GRADUATE PROGRAM

Master of Arts in Teaching

The Department of Sociology does not offer a program at the master's degree level at this time. Sociology courses may be taken, with faculty advisor approval, in a program leading to the degree of Master of Arts in Teaching with a concentration in the behavioral sciences.

Additional information regarding this degree may be found in the Graduate School section of this catalogue as well as under the Division of Behavioral Sciences.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.A.T. degree requirements: SO 202, SO 330, and SO 499.

COURSE OFFERINGS***SOCIOLOGY****SO 202 Introduction to Sociology****3 crs.**

Social structure, basic human institutions, analysis of social processes, major social forces.

SO 302 Social Problems (formerly SO 316)**3 crs.**

Contemporary social problems which are reflected in the behavior of individuals, but whose origins and causes lie out side of individuals. Topics treated will include drug abuse, crime, juvenile delinquency, divorce and other family problems, mental illness and other health problems, social class, and selected social issues.

SO 303 The Family**3 crs.**

The family as a social institution in terms of its historical and cultural development. Analysis of psychological and social factors in contemporary family life.

SO 304 Social Stratification: Class, Status and Power in America**3 crs.**

Historical and contemporary examples of the range of stratification systems. Problems of class and caste conflicts. Trends in class system and social mobility, with special attention given to similarities and differences of modern industrial societies.

SO 305 Sociology of Education**3 crs.**

Educative factors in the social process. Some attention will be given to preliterate cultures and the functioning of the dominant institutions. Major emphasis on the relation of stratification to education, and of education to horizontal and vertical mobility. Social class and ethnic backgrounds will be examined for their relationship to the functioning of schools. Recent, well-known empirical findings will be discussed.

SO 306 Urban Sociology**3 crs.**

Prq.: SO 202

A sociological and ecological analysis of the city in terms of urban institutional and personality patterns, folkways and mores. Ecological processes and structures. The city as center of dominance over a trade area and hinterland.

SO 307 Urban Problems**3 crs.**

Prq.: SO 202

Poverty, intergroup conflict, breakdown in education, crime, delinquency and urban riots will be examined. Special emphasis will be on institutional approaches to dealing with these problems.

SO 308 Sociology of Religion (formerly SO 204)**3 crs.**

Comparative study of religious systems and institutions; function and role of religion and the church in society; professional status, history and relations of the clergy.

SO 310 Society and Culture in Modern India**3 crs.**

A descriptive and analytical examination of societies of the Indian subcontinent dealing with their cultural histories, economic, social, political and religious institutions. Problems of cultural and social change. Course may be used to satisfy requirements for Anthropology majors and minors.

SO 312 Minority Relations**3 crs.**

Prq.: SO 202

A study of the relations between ethnic and racial groups in the United States, with particular attention to the Boston Irish, the Boston Italians, and the Negro-Americans. Concentrations will be upon the Negro in America and the problems of identity.

*See page 50 for general information regarding course offerings.

SO 318 Structural Problems in American Society

3 crs.

Prq.: SO 202

Unemployment, mass poverty, concentration of wealth and political power, and war. The course will involve an analysis of the economic structure and the political and ideological structures that constitute the American system. Several solutions to these problems will be analyzed.

SO 319 Population and Society

3 crs.

The mutual influence of demographic factors and social structure. Trends in population growth and their relationship to industrialization, urbanization and economic development. Current trends in population growth and their implications for developing nations as well as for developed nations. Relationship between population and environmental problems. Methods and problems of population control.

SO 320 The Sociology of Development in Third World Countries

3 crs.

Prq.: SO 202 or AN 201

An introduction to the sociological aspects of development in the developing countries of Asia, Africa, and Latin America. Relationship of industrialization, urbanization, education, the "Green Revolution", population growth, class structure, political structure, etc., to development. The role of the West in the development process of the Third World countries, historically and at present. Special attention given to structural change and interpersonal dependency.

SO 321 Religion and Society in Asia

3 crs.

The interrelationship between religion and social change will be discussed with particular reference to selected countries in Asia, including Japan, India, and Ceylon. The major characteristics of Islam, Hinduism, and Buddhism will be studied in relation to their effect on society.

SO 328 Criminology

3 crs.

Prq.: SO 202, or permission of the Instructor.

This course will be concerned with theories of crime causation, and perspectives on administration, treatment, prevention, and prediction. Consideration will be given to the influence of social class and other factors in criminal behavior.

SO 329 Public Opinion and Mass Media

3 crs.

Prq.: SO 202, or consent of the Instructor.

Principles of mass communication and public opinion will be discussed from the point of view of the source of a message, the message itself, the audience, the channel through which the message proceeds and the effect of the message.

SO 330 Woman's Role In A Changing Society

3 crs.

An analytical study of the relation of sex to power and influence in society. Differentiation in sex roles as affected by the economy and reinforced by other institutions. New alternatives for women. Reciprocal role changes for men.

SO 350 Sociology of Work

3 crs.

Prq.: SO 202

An analysis of the occupational system as affected by "non-economic" institutional factors. Changes in the occupational structure and the class structure; Employers and trade unions; Managers and workers; Work situation and the life situation; Professionalization and "white collar unionism".

SO 400 Seminar: Social Theory

3 crs.

The history of social theory and selected topics in modern social theories, analysis of alternative conceptual approaches and their methodological requirements. For majors in Sociology or Behavioral Sciences.

SO 402 Seminar: Research Methods in Sociology

3 crs.

Application of scientific methods to the analysis of social phenomena, methodological orientation in sociology, types of research procedure, nature of sociological variables. For majors in Sociology or Behavioral Sciences.

SO 403 Advanced Social Research Methodology 3 crs.

Prq.: SO 402.

Students will conduct social research, using techniques taught in SO 402, writing reports of findings as for publication. Experimental, survey and content analysis approaches will be used.

SO 404 Social Gerontology — Sociology of Aging 3 crs.

Prq.: SO 202

This course will focus on aging in America as a social problem. Topics covered will include reasons for the view of aging as a problem, the impact of aging on individuals and society, sociological theories of aging, and proposed ways of alleviating or eliminating aging as a problem.

SO 411 Types of Asocial Personalities I 3 crs.

Prq.: SO 202, SO 302, and SO 328.

Intended for the mature undergraduate or graduate student. It uses the clinical method of instruction, having available live case material. Topics covered include the development of asocial personalities, especially the alcoholic, drug addict, anti-social retarded, and sexually deviated. (Students may take either SO 411 or SO 412, but not both, for credit toward a major in sociology.)

SO 412 Types of Asocial Personalities II 3 crs.

Prq.: SO 202, SO 302, and SO 328.

The intent and method is the same as in SO 411, Asocial Personalities I. The varieties of psychoses, assaultive epilepsies, and organic brain damages are considered. Current methods of detection and treatment are outlined. (Students may take either SO 411 or SO 412 but not both, for credit toward a major in sociology.)

SO 420 Complex Organizations 3 crs.

Prq.: SO 202, or permission of the Instructor.

This course will deal with the emergence, structure, function, and social significance of complex organizations. Emphasis will be placed upon the results of research in hospitals, schools, prisons, and military and industrial organizations. Some attention will be given to informal associations and organizational change.

SO 425 Social Change 3 crs.

Prq.: SO 202 and SO 400, or consent of the Instructor.

Sources, patterns, spheres, levels, processes, policies of social change. Classical, neo-classical, modern theories in the field. The course emphasizes the above as related to contemporary societies.

SO 426 Sociology of Politics 3 crs.

Prq.: SO 202 and SO 304, or consent of the Instructor.

A study of the state, political practices, power, and theories in the field. The emphasis is on the sociological conditions under which the above phenomena evolve.

SO 498 Field Experience in Sociology 3-15 crs.

Prq.: Consent of Department.

The Department of Sociology offers field experience in human services agencies, such as public welfare, family planning, anti-poverty or problem-solving agencies; survey research in a wide variety of institutions; community development for public or voluntary agencies, such as the United Fund, programs for older-adults, programs for youth or children.

SO 499 Directed Study In Sociology 1-3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

SO 500 Curricular Materials 3 crs.

Social structure, basic human institutions, and analysis of social processes. The course presents new sociological publications designed especially for secondary school use by teams of sociologists representing the American Sociological Association.

SO 502 Research credit to be arranged

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

SO 503 Directed Study

credit to be arranged

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

SOCIAL WORK

SO 309 Introduction to Social Welfare

3 crs.

Prq.: SO 202, SO 302

Institutional analysis of social welfare, social agencies. Sociological aspects of social work as a profession.

SO 311 Social Work Methods

3 crs.

Prq.: SO 309, or permission of the Instructor.

A descriptive overview of the field of social work practice. The following topics will be approached from a generic standpoint: concepts and techniques in practice, casework, group work and community organization, interviewing, roles of workers and clients, social process, problem solving and skill development.

SO 314 Case Work Methods

3 crs.

Prq.: SO 309.

Case work is based on recognition of internal psychological problems and external social causes of an individual failure to function satisfactorily. Techniques of interviewing. Theoretical study of human behavior. Experience in social work agencies.

SO 315 Human Behavior and Social Environment

3 crs.

Prq.: SO 309.

An examination of the biological, psychological, and social development of the individual throughout his life span, and the relation of these factors to the individual's functioning in his environment. Special emphasis on the implications for social work practice.

SO 324 Social Group Work

3 crs.

Prq.: SO 302, SO 309, SO 311, SO 314, or permission of the Instructor.

Basic concepts, principles, techniques and approaches used in offering services to groups. A variety of agencies providing group service will also be examined.

SO 325 Community Organization

3 crs.

Prq.: Same as SO 324.

Presentation and discussion of concepts, principles, methods of techniques of providing human services and upgrading neighborhoods and communities.

SO 407 Social Welfare Policy

3 crs.

Prq.: SO 309

Analysis of current social policy issues in the United States. Special attention will be given to the relevancy of the issues to small cities, towns, and rural areas. Stress will be placed on such issues as manpower, health services, child welfare services, and other delivery systems as they are influenced by the economic and political structures common to cities and towns of less than 300,000 population.

SO 409-410 Field Work Seminar I-II

3 crs. for each semester

Prq.: SO 314, SO 324, SO 325, or permission of Instructor.

In conjunction with a supervised field experience in a community agency, this seminar will provide opportunity for the student to integrate that field experience with social work theory in the classroom.

Division of Creative Arts

Art, Communication Arts & Sciences, Music

Divisional Director: Professor Robert Barnett

The Division of Creative Arts, consisting of the Departments of Art, Music, and Communication Arts & Sciences (Speech & Theatre) offers majors in Art and Communication Arts & Sciences which lead to the degree of Bachelor of Arts. In Communication Arts & Sciences, a major may choose from among three distinct programs. Communication, Communication Disorders, and Theatre. Both Art and Communication Arts & Sciences offer a B.A. degree with a minor in Secondary Education for those who wish to choose teaching as a career. Minor programs are offered in each of the above areas as well in Music. Each of the departments in the division offers a balanced program with ample opportunity for both theory and practice.

The core of all three programs is the development of the student's individual creativity, his "talents". Whether it be in Music, Art or Communication Arts & Sciences, a program of curricular as well as co-curricular activities attempts to nurture the student's abilities to express himself in a creative manner. Undergirding the philosophy of the division is the belief that a strong academic program, plus rigorous training in the arts, increases the student's imaginative and innovated capabilities.

In addition to the B.A. degree, the Division of Creative Arts also offers programs leading to the degree of Master of Arts in Teaching with a concentration in Communication Arts & Sciences (Communication and Theatre) as well as in Creative Arts (Art, Music, Communication and Theatre).

Department of Art

Associate Professor Stephen Smalley, Chairperson

Associate Professor John Heller

Assistant Professors: John Droege, Joan Hausrath, William Kendall

Instructors: Carol Pendergast, Dorothy Pulsifer

UNDERGRADUATE PROGRAMS

Bachelor of Arts

The Department of Art offers students a choice of two major areas of study and career preparation in the visual arts. For both areas, care has been taken in developing the study of art so that a basic yet versatile and resourceful foundation in the arts is assured.

The major in art is designed to meet the needs of those students whose career ambitions include training for commercial art fields, industrial and product design, community art programs or graduate study in the arts, as well as those who seek teaching in the public schools as a career.

Students interested in teaching must select Secondary Education as a minor, if they desire certification in art for the public schools. Prospective teachers of art are encouraged to join the Student Chapter of the National Art Education Association. Others may select a minor complementing their major in art.

The diversity of course offerings within the Art Department provides an excellent opportunity for students electing an art minor to enlarge upon their cultural foundation. Through a cultivation of aesthetic sensibilities, it is hoped that the entire college experience will be enriched.

To help insure an appropriate selection of art courses in the major or minor, it is important that each student work closely with his or her art advisor or the department chairperson in program selection. This is particularly important within an instructional program that seeks to develop and refine art skills as well as enlarging upon one's creative dimensions.

A comprehensive gallery calendar is maintained throughout the academic year.

Art Major

AR 120, AR 201, AR 202, AR 220, AR 230, AR 240, AR 250, AR 271, plus twelve (12) additional credit hours in art, selected in conjunction with the major advisor. the major advisor.

There is no foreign language requirement for the art major.

Art Minor

Eighteen semester hours in Art as selected in conjunction with an art advisor.

GRADUATE PROGRAM

Master of Arts in Teaching

The Department of Art does not offer a program at the master's degree level at this time. Art courses may be taken in a program leading to the degree of Master of Arts in Teaching with a concentration in creative arts. A diverse and appropriate program of study in art is ensured when the student works closely with the advisor in course selection. Additional information regarding the degree may be found in the Graduate School section of this catalogue.

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.A.T. degree requirements: AR 110 and AR 499.

COURSE OFFERINGS*

AR 110 Introduction to Art

3 crs.

Emphasis on painting, sculpture, and architecture; analysis of media, technical processes, and aesthetic principles; and discussion of style and its historical context. Assigned readings and museum visits.

AR 120 Basic Design

3 crs.

Studio exercises dealing with the fundamental elements and principles of design including color, shape, line, texture, balance and space and the organization of these elements in a work of art. Three two-hour periods weekly.

AR 201 History of Art I

3 crs.

Major developments in art from the prehistoric through the late Gothic. Style is examined in relation to the historical process. Assigned readings and museum work.

AR 202 History of Art II

3 crs.

Major developments in art from the Renaissance through the Modern era. The historical approach supplemented with analysis of stylistic problems. Assigned readings and museum work.

AR 220 Drawing I

3 crs.

Basic concepts: perspective, modeling in light and dark, contour drawing. Exploration of various media: pencil, pen and ink, charcoal, ink wash, etc. Three two-hour periods weekly.

AR 230 Painting I

3 crs.

Basic skills, picture organization, and painting techniques applied to assigned problems. Field trips to museums and galleries. Three two-hour periods weekly.

AR 235 Watercolor Painting

3 crs.

Development of transparent watercolor techniques and pictorial composition. Three two-hour periods weekly.

AR 240 Sculpture I

3 crs.

Design experimentation with traditional and new techniques. Media will include wood, metal, and resins. Three two-hour periods weekly.

AR 250 Printmaking I

3 crs.

Prq.: AR 220 or consent of Instructor.

The basic methods, materials and processes used in printmaking. Three two-hour periods weekly.

AR 260 Glassblowing I

3 crs.

Prq.: Consent of the Instructor.

Glass as a means of creative expression; the basic forming techniques and methods of design in glass. Three two-hour periods weekly. (Not offered in 1976-1977).

AR 271 Ceramic Design

3 crs.

Basic wheel forming and construction. Techniques in clay. Three two-hour periods weekly.

AR 272 Wheel Throwing

3 crs.

Prq.: AR 271 or consent of the Instructor.

Advanced problems and experience on the potter's wheel, and esthetics of ceramic design. Three two-hour periods weekly.

AR 280 Metal Design I

3 crs.

Basic design, construction, and forming techniques. Jewellery, constructed forms, sculpture. Three two-hour periods weekly.

AR 290 Weaving I

3 crs.

Introduction to traditional and contemporary weaving and related techniques. Assigned projects stress the aesthetic combined with the technical considerations of fiberwork. Six studio hours per week.

*See page 50 for general information regarding course offerings.

- AR 300 Materials and Methods** 3 crs.
 Studio experiences with materials and processes related to the teaching of art in the public schools. Discussion of methodology and child art. Assigned readings and field trips to school art programs. Three two-hour periods weekly.
- AR 302 Greek and Roman Art** 3 crs.
 Painting, sculpture, architecture and the minor arts. Historical antecedents and significant cultural influences in art.
- AR 303 Medieval Art and Architecture** 3 crs.
 A study of painting, architecture, sculpture and minor arts produced in Europe from the time of early Christianity to the Renaissance. Special emphasis on stylistic and cultural influences.
- AR 304 Renaissance Art and Architecture** 3 crs.
 The development of the arts of architecture, painting, and sculpture in the Early and High Renaissance, with special emphasis on their interrelationships and their relation to the artistic theories and cultural ideals of the time.
- AR 305 Baroque Art** 3 crs.
 Mannerist and Baroque styles of the sixteenth through eighteenth centuries will be studied, with emphasis on their origins in Italy and development through Western Europe.
- AR 307 Modern Art** 3 crs.
 Painting, sculpture and architecture from Neo-Classicism to the present. Emphasis on major contemporary art movements.
- AR 308 American Art and Architecture** 3 crs.
 Major trends in painting, sculpture, and architecture in America, 1620 to present, including regional styles, folk art, and crafts.
- AR 309 Arts of the Far East** 3 crs.
 A selective review of major achievements in the arts of the Asiatic tradition, including those of India, Indonesia, China, Korea, and Japan. Comparison, when appropriate, with the arts of the West. (Not offered in 1976-1977).
- AR 310 Art and the Crafts in Special Education** 3 crs.
 Art education theory and direct experience with a variety of materials and processes adapted to the needs of special education. Three two-hour periods weekly.
- AR 311 Primitive Art** 3 crs.
 Formal art properties and esthetic qualities of primitive art; the physical, psychological, and sociological backgrounds which brought this art into being.
- AR 312 Interior Design** 3 crs.
 Traditional and contemporary styles in furniture and interior design studied in illustrated lectures and field trips. Problems in selection and arrangement of home furnishings.
- AR 313 Art and Architecture of Early New England** 3 crs.
 A study of domestic architecture and decorative arts of New England from its Pilgrim beginnings to the early 19th century. The course consists of a series of classroom slide lectures and field trips to historic houses throughout New England.
- AR 320 Drawing II** 3 crs.
 Prq.: AR 220 or consent of the Instructor.
 Advanced projects will be planned according to the individual's style development and media preference. Three two-hour periods weekly.
- AR 330 Painting II** 3 crs.
 Prq.: AR 230 or consent of the Instructor.
 Advanced projects will be planned according to the individual's style of development. Three two-hour periods weekly.

- AR 340 Sculpture II** 3 crs.
Prq.: AR 240 or consent of Instructor.
Advanced projects will be planned according to the individual's style, development and media preference. Three two-hour periods weekly.
- AR 350 Printmaking II** 3 crs.
Prq.: AR 250 or consent of Instructor.
Advanced projects planned according to the student's stylistic development and media preference. Three two-hour periods weekly.
- AR 351 Silkscreen** 3 crs.
Prq.: AR 220 or consent of Instructor.
An introduction to traditional and innovative serigraph methods: glue, tusche, paper, cut film and photographic silk screen stencil.
- AR 352 Lithography** 3 crs.
Prq.: AR 220 or consent of Instructor.
An exploration of the technical and aesthetic possibilities of lithography in black and white and color. Stone lithography, metal plates and paper plates will be utilized.
- AR 360 Glassblowing II** 3 crs.
Prq.: Consent of the Instructor.
Further exploration of glassblowing. Emphasis on studio equipment, design, and advanced techniques. Three two-hour periods weekly. (Not offered in 1976-1977.)
- AR 370 Clay and Glazes** 3 crs.
Prq.: AR 271 or consent of the Instructor.
Advanced work in the chemistry and compounding of clay and glaze materials. Three two-hour periods weekly.
- AR 380 Metal Design II** 3 crs.
Prq.: AR 280 or consent of the Instructor.
Advanced problems and techniques. Three two-hour periods weekly.
- AR 390 Weaving II** 3 crs.
Prq.: AR 290 or consent of Instructor.
Advanced problems and techniques. Six studio hours per week.
- AR 480 Advanced Jewelry Design** 3 crs.
Prq.: AR 280 or consent of the Instructor.
Specialized techniques for the design and creation of jewelry in precious metals, and experimental construction techniques with these metals. Three two-hour periods weekly.
- AR 491 Art Education Seminar** 3 crs.
Prq.: ED 490 or consent of Instructor.
Limited to Seniors who have completed their student teaching in Art. Examinations of various concepts in art education as well as historical and professional perspectives. Field trips, speakers, and workshops.
- AR 499 Directed Study in Art** 1-3 crs.
Prq.: Consent of the Department.
Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.
- AR 502 Research** credit to be arranged
Prq.: Approval of the Advisor.
Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.
- AR 503 Directed Study** credit to be arranged
Prq.: Approval of the Advisor.
Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

Department of Communication Arts & Sciences

Assistant Professor Lee A. Dunne, Chairperson

Professors: Willis Pitts, Richard Wayre

Associate Professor: Robert J. Barnett

Assistant Professors: Stanley Deetz, Robert Friedman, Stephen Levine,
Susan Miskelly, Frederic Skalny, Cora Miller Wells, Joanne Wuschke

UNDERGRADUATE PROGRAMS

Bachelor of Arts

Students majoring in Communication Arts & Sciences may choose from one of three related disciplines for study or career preparation: THEATRE, COMMUNICATION OR COMMUNICATION DISORDERS.

Students enrolled as Communication Arts & Sciences majors must pass a Speech Proficiency Test before the end of their first year in the department.

Communication

Students selecting this major track pursue a course of applied and theoretical studies in interpersonal relationships, small group communication, organizational communication, public speaking and debate. The minimum requirements include:

CA 200, CA 210, CA 310, CA 250 or CA 351, CA 260 or CA 360, CA 450, CA 495, plus one additional course. CA 370 if minoring in Secondary Education.

Communication Minor

CA 200, CA 210, CA 370, plus nine additional credits selected from Communication courses.

Communication Disorders

The specialization in Communication Disorders is a pre-professional program providing the necessary course work to continue in speech pathology, audiology or related fields at the graduate level. Courses in the specialization can be credited toward American Speech and Hearing Association Certification.

At this time, through course work available in the department, a student is able to satisfy the Massachusetts state requirements for certification for a Teacher of the Speech and Hearing Handicapped.

The minimum requirements include:

CA 200, CA 210, CA 291, CA 292, CA 440, CA 490, CA 491.

If state certification is sought, a student is expected to take CA 493, CA 498, plus an additional twelve (12) hours chosen from the following areas:

Psychology of the Handicapped

Principles of Teaching Handicapped Children

Child Development

Adolescent Development

Guidance

Educational Tests and Measurements

Mental Hygiene

Communication Disorders Minor

CA 200, CA 210, CA 291, CA 292, CA 480 and CA 491

Theatre

Students selecting this major track follow a program designed to familiarize them with and to develop an appreciation of those subjects related to performance and production in live theatre. The minimum requirements include:

CA 200, CA 210, CA 370, CA 380, CA 390, CA 395

CA 431, CA 432, plus four credits in CA 130.

CA 310 if minoring in Secondary Education.

Theatre Minor

CA 200, CA 210, CA 370, two credits in CA 130, plus nine additional credits selected from Theatre courses.

Co-Curricular Programs

The Department of Communication Arts & Sciences has an active children's theatre program which provides at least one performance a year for school age children. Four student clubs are actively engaged in co-curricular activities supportive of the academic programs in the Department of Communication Arts and Sciences.

The Ensemble Theatre, in cooperation with the theatre staff, produces 3 to 4 major theatrical performances a year and supervises studio productions which are directed by students.

The Forensic Society participates in intercollegiate competition in debate, group discussion, and individual speech competition in over twelve separate categories including persuasive, informative, and humorous speaking and oral interpretation of literature. Membership is open to all students with or without previous experience.

The Bridgewater Chapter of the National Student Speech and Hearing Association is open to all students in the college community with an interest in communication disorders. The group sponsors career counseling as well as professionally related workshops during the academic year.

The Modern Dance Club is open to all who like to dance and participate in the performance of original works.

Co-Curricular Credits

Students may also receive credits in the department for active participation in debate, forensics, choral speaking, or theatre (see CA 110, CA 120, CA 130).

GRADUATE PROGRAMS

Master of Arts in Teaching

The Department of Communication Arts and Sciences offers a program leading to the degree of Master of Arts in Teaching with a concentration in Communication and Theatre. This concentration is designed primarily for teachers and future teachers of communication and theatre. In addition to meeting general degree requirements, the student must complete the departmental concentration requirement by electing courses appropriate to his degree program and approved by his advisor.

Communication Arts and Sciences courses also may be taken in a program leading to the degree of Master of Arts in Teaching with a concentration in creative arts.

Additional information regarding these degree programs may be found in the Graduate School section of this catalogue.

Two undergraduate courses are prerequisite for the graduate degree courses offered by the department: CA 200 Oral Communication and CA 370 Play Production. Additional undergraduate prerequisites in other departments may be required. No graduate degree credits may be earned in these courses.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.A.T. degree requirements: CA 200, CA 215, CA 250, CA 260, CA 370, CA 498, and CA 499.

COMMUNICATION

COURSE OFFERINGS*

‡CA 110 Debate Practicum

1 cr.

Credit is given for sixty (60) or more hours of intercollegiate debate and forensics.

CA 200 Oral Communication

3 crs.

Designed to develop and improve basic communication skills necessary for successful interaction in everyday and professional settings. Practice skills generally include listening, interviewing, speaking and basic problem solving discussion.

CA 210 Voice and Diction

3 crs.

Analysis of each student's habits of respiration, phonation, and articulation; exercises designed to correct poor habits. Physics and physiology of the vocal mechanism. Training in perception, differentiation, and production of the standard sounds of good American speech.

CA 215 Speech for Radio and Television

3 crs.

Prq.: CA 210 or consent of Instructor.

Study and practice of styles and techniques of speech for broadcasting.

CA 250 Public Speaking

3 crs.

Study, evaluation and analysis of speech preparation with frequent practice of various speech types.

CA 260 Group Discussion

3 crs.

Principles of human interaction in small groups with stress on participation, leadership, reasoning, and problem solving.

CA 351 Persuasion

3 crs.

Study of the theory of persuasive speaking with frequent practice.

CA 360 Argumentation and Debate

3 crs.

Prq.: CA 200.

Study and practice of analysis, research, and refutation of debate cases using a variety of formats.

CA 363 Interpreting Communicative Behavior

3 crs.

Theoretical insight and practical experience will be given toward developing the ability to describe and understand communicative behavior in its existential implications rather than subjective or casual terms. Not open to Freshmen except by special permission of the Department.

CA 400 Creative Techniques for Teaching

3 crs.

Story telling, creative dramatics, role playing, puppets and masks, and other speech arts, and their practical application in teaching various subjects.

CA 450 Communicative Theory

3 crs.

An introduction to the nature and role of theories in understanding human communication and an exploration of various current communication theories and perspectives. Special attention will be paid to the practical and social consequences of accepting any theory. Not open to Freshmen except by special permission of the Department.

CA 452 Organizational Communication

3 crs.

Analysis of communication problems in modern complex organizations, theory and practice.

*See page 50 for general information regarding course offerings.

‡Note: From the one-credit co-curricular activities, CA 110, 120 and 130, and from any and all co-curricular activities in which a student might wish to participate and from which the College grants, or may decide to grant credit in the future, a student may accumulate not more than one credit per semester (two per year) nor more than six per four year degree program.

CA 480 Introduction to Television

3 crs.

Television as a medium of communication in society and in the school. Study of the historical development of broadcasting and the current status of the medium. Active participation in developing skills of performance for users as an educator, civic leader, or professional broadcaster.

CA 486 Mass Communication in Society

3 crs.

A basic introduction to research and theory in mass communication by focusing on major social questions regarding the mass medias and examining empirical research relevant to these questions.

CA 495 Communication Arts and Sciences Seminar

3 crs.

Study and application of research methods in the area of Communication Arts & Sciences, with particular emphasis on the individual student's interests in the discipline.

COMMUNICATION DISORDERS

CA 291 Phonetics

3 crs.

Speech sound analysis by means of the International Phonetic Alphabet.

CA 292 Language Acquisition and Development

3 crs.

Prq.: CA 291.

Interrelationships among neurophysiological, physical, intellectual, social, cultural and linguistic factors as they effect language acquisition in the young child. Analysis of language development will be undertaken by students.

CA 440 Audiology

3 crs.

Prq.: CA 291, CA 490.

Science of hearing, transmission and measurement of sound to the human ear; anatomy, physiology, and neurology of hearing mechanism. Related pathological conditions.

CA 457 Introduction to Stuttering Theory and Therapy

3 crs.

Prq.: CA 491 or equivalent and consent of Instructor.

Major theories on etiology of stuttering, research in description and measurement of stuttering behavior, and examination of various therapy models.

CA 458 Aphasia in Adults

3 crs.

Prq.: CA 491 or equivalent and consent of Instructor.

An introduction to the understanding and rehabilitation of the aphasic adult; consideration of neuroanatomy, etiologies, characteristic language and speech disorders, psychological-correlates, classification systems, diagnostic and rehabilitative procedures.

CA 490 Speech Anatomy and Physiology

3 crs.

Examination of the human hearing and vocal mechanisms involved in the speech act and their relationship to various speech disorders.

CA 491 Communication Disorders

3 crs.

Prq.: CA 292 or consent of Instructor.

Introduction to communication disorders in children and adults. Symptomatology etiology and intervention techniques are considered.

CA 493 Speech Reading and Auditory Training

3 crs.

Prq.: CA 440 or consent of Instructor.

Habilitative and rehabilitative procedures for the deaf and hard of hearing with emphasis on auditory training, speech reading and speech conservation.

CA 498 Clinical Practicum: Communication Disorders

6 crs.

Prq.: Consent of Department.

Clinical experience in speech pathology or audiology. Clinical hours obtained can be credited toward required A.S.H.A. hours. Placements are varied and include hospital clinics, community health agencies and public schools.

THEATRE

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| ‡CA 120 Choral Speaking Practicum | 1 cr. |
| Credit is given for sixty (60) or more hours of participation. | |
| ‡CA 130 Theatre Practicum | 1 cr. |
| Credit is given for sixty (60) or more hours of participation in theatre. | |
| CA 270 Community Theatre | 3 crs. |
| Trends, organization, and practices of local and regional theatrical groups. Non-performance. | |
| CA 271 Stage Make-up | 1 cr. |
| Study and practice in the art of straight and character make-up for stage, television, and film. Two contact hours per week twice weekly. | |
| CA 272 Stage Costuming | 1 cr. |
| A study of period fashions and principles of costume design. Two contact hours per week twice weekly. Offered in alternate years. | |
| CA 310 Oral Interpretation | 3 crs. |
| Prq.: CA 210 Oral reading of selected prose, poetry and drama: Individual and group forms. Theory and practice. | |
| CA 330 Creative Dramatics | 3 crs. |
| Development of the child's creative faculties through the use of dramatic play in laboratory sessions as well as classroom activity. | |
| CA 370 Play Production I | 3 crs. |
| Reading, selection, analysis, and preparation of scripts for presentation. Theory and practice. | |
| CA 373 Theatre Management | 3 crs. |
| Prq.: CA 370. Study of the commercial aspects of theatrical production: publicity, programs, financing, ticket sales and house management. | |
| CA 375 Scene Design | 3 crs. |
| Prq.: CA 370. Theory and practice of designing for stage productions. Laboratory fee. | |
| CA 380 Stagecraft | 3 crs. |
| Prq.: CA 370. Theory and practice of technical theatre with emphasis on planning the production. Study and practice in stage management, set construction, costuming, properties, make-up, and sound. | |
| CA 385 Stage Lighting | 3 crs. |
| Materials and techniques fundamental to historical and contemporary stage lighting; analysis of the principles of design as they relate to contemporary theatre execution. | |
| CA 390 Principles of Acting | 3 crs. |
| Prq.: CA 370 Development of appreciation and basic skills in the fundamentals of acting. Exercises, improvisations, and scenes. | |

‡Note: From the one-credit co-curricular activities, CA 110, 120 and 130, and from any and all co-curricular activities in which a student might wish to participate and from which the College grants, or may decide to grant credit in the future, a student may accumulate not more than one credit per semester (two per year) nor more than six per four year degree program.

- CA 391 Advanced Acting** 3 crs.
Prq.: CA 370, CA 390 or consent of the Instructor.
Advanced problems and projects; intensive scene analysis and introduction to styles of acting.
- CA 392 Improvisational Acting** 3 crs.
Development of the student's capabilities in interpreting his awareness of life through concentration, imagination, and observation.
- CA 395 Principles of Directing** 3 crs.
Prq.: CA 370, CA 390 or consent of Instructor.
Basic knowledge and techniques for the beginning director. Play analysis, composition, movement, characterization and rehearsal.
- CA 420 Children's Theatre** 3 crs.
Prq.: CA 370.
Theatre for the child audience. Theories applied by assuming responsibility for the production of a play for children on campus and in area schools.
- CA 431 Theatre History I** 3 crs.
Trends in dramatic and theatrical developments throughout the western world from Ancient Greece to the 17th century. Not open to Freshmen except by special permission of the Department.
- CA 432 Theatre History II** 3 crs.
Trends in dramatic and theatrical developments throughout the western world from the 17th century to the present. Not open to Freshmen except by special permission of the Department.
- CA 435 Period Styles of Theatrical Productions** 3 crs.
Prq.: CA 390 or CA 395 or consent of the Instructor.
Analysis and practice of the staging methods and styles of selected historical periods which are considered classic in the evaluation of theatre, such as: styles appropriate to the works of Sophocles, Plautus, Shakespeare, and Moliere.
- CA 470 Playwriting** 3 crs.
Appreciation of the nature of the play as an art form. Analysis of plays of various types; practice in writing.
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- CA 399 Topical Studies** 3 crs.
Variable contemporary topics in Theatre, Communication, or Communication Disorders.
- CA 499 Directed Study in Communication Arts and Sciences** 1-3 crs.
Prq.: Consent of the Department.
Original research undertaken by the graduate student who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.
- CA 502 Research** credit to be arranged
Prq.: Approval of the Advisor.
Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.
- CA 503 Directed Study** credit to be arranged
Prq.: Approval of the Advisor.
Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

Department of Music

Professor Kenneth Falkner, Chairperson

Associate Professors: Dorothy Ferry, Vincent Gannon

Assistant Professors: Maxine Asseline, Theodore Davidovich, Ian Johnstone,
Jacob Liberles, Henry Santos

UNDERGRADUATE PROGRAMS

The Music Department offers a minor in music for the liberal arts and elementary education majors, courses for the humanities elective requirement, private instruction in piano and voice, and performing organizations for the student who wishes to take a more active part in music.

Students must notify and receive approval from the department chairperson for acceptance into the music program. A grade of C or better is expected in all music course work as well as membership in one performing organization.

Music Minor for Liberal Arts students

3-6 credits in applied piano or voice

MU 171, MU 172, MU 160

Select from MU 360, MU 364, MU 367, MU 368, MU 461 to total 18 credits

Music Minor for Elementary and Special Education students.

MU 130, MU 140 or 240, MU 160 or 360, MU 171, MU 172, MU 251, MU 255.

GRADUATE PROGRAM

Master of Arts in Teaching

The Department of Music does not offer a program at the master's degree level at this time. Music courses may be taken, with faculty advisor approval, in a program leading to the degree of Master of Arts in Teaching with a concentration in creative arts.

Additional information regarding this degree may be found in the Graduate School section of this catalogue.

The department offerings listed below include the following courses which may **not** be used in partial fulfillment of M.A.T. degree requirements: any course in the 100 level, MU 230, MU 240, MU 331, MU 341, MU 340 and MU 499.

COURSE OFFERINGS***‡MU 113 Stage Band****1 cr.**

Prq.: Consent of the Instructor.

A performing group limited to twenty students in a laboratory experience which stresses basic musicianship, analysis of form and style, ensemble playing, and improvisation. One three-hour period weekly.

‡MU 115 Instrumental Ensemble**1 cr.**

Prq.: Consent of the Instructor.

A mixed group of instruments which performs music originally written for that particular combination of instruments. Ensembles formed as the occasion demands. One three-hour period weekly.

‡MU 117 Women's Glee Club**1 cr.**

Open to all female students who like to sing. Performances are given during the year which includes traditional and folk songs, arrangements from musical comedies and music that is currently popular.

‡MU 118 Chorale**1 cr.**

Prq.: Consent of the Instructor.

A selected group of mixed voices which performs works representative of many periods of music and presents concerts throughout the academic year, at times with other college groups on and off campus. Three periods weekly.

‡MU 119 Vocal Ensemble**1 cr.**

Prq.: Consent of the Instructor

A mixed group of voices which is organized to perform a particular type of music. Ensemble formed as the occasion demands. Three periods weekly.

MU 130 Voice Class I**3 crs.**

Correct posture, breathing and control are studied as well as ways of correcting individual voice problems, repertoire, solfeggio, and advanced dictation.

MU 131 Applied Voice I**1 cr.**

Prq.: Consent of Instructor.

Private lessons in voice for the beginning student and those with a limited background in singing. Basic concepts in posture, breathing, diction and vocalises stressed. Solo material selected from vocal literature in English with an introduction to literature in a foreign language. One half-hour period weekly. May be repeated for credit.

MU 140 Class Piano I**3 crs.**

For beginning piano students who desire a fundamental approach to the keyboard. Required of elementary education majors who have elected music as a concentration or a minor. Includes correct use of the hands at the keyboard, playing of simple scales and chords, arpeggios and simple melodies; scale construction and use of I, IV and V chords.

MU 141 Applied Piano I**1 cr.**

Prq.: Consent of the Instructor.

Private instructions for the beginning piano student and those with limited background in piano. Material selected according to the ability of the student. One half-hour period weekly. May be repeated for credit.

MU 150 Essentials of Music**3 crs.**

An integrated approach to the use of music in the elementary school which serves to enhance the student's knowledge and ability to use music in the classroom.

‡From MU 113, 115, 117, 118 and 119, and from any and all co-curricular activities in which a student might wish to participate and for which the College grants or may decide to grant credit in the future, a student may accumulate not more than one (1) credit per semester, nor more than two (2) per year, nor more than six (6) per college career.

*See page 50 for general information regarding course offerings

MU 160 Music Literature I

3 crs.

A non-technical humanities elective which explores music from the Baroque through contemporary periods with emphasis on how to listen to music intelligently. Selected works by the masters include symphonies, concertos, oratorios, operas, and smaller works which are used for study, listening and discussion.

MU 170 Music Theory

3 crs.

A basic course in the elements of music that includes the development of scales, basic triads, melodic and rhythmic dictation and sight-singing.

MU 171, 172 Harmony I-II

3 crs. for each semester.

A beginning technical course in the study of 18th and 19th century theory of music for students who wish a foundation for further development of their musical awareness. Includes rudimentary fundamentals of music theory, harmonic structure of chords of the sixth through secondary dominants, and simple modulations. MU 171 is prerequisite to MU 172.

MU 230 Voice Class II

3 crs.

Prq.: MU 130 or permission of Instructor.

A continuation of Voice Class I dealing with further development of German lieder and performance practices.

MU 240 Class Piano II

3 crs.

Prq.: MU 140 or consent of the Instructor.

A continuation of MU 140 with advanced keyboard work and more difficult melodies and rhythmic patterns. Use of II, III and VI chords, simple modulations, and keyboard harmony.

MU 251 Choral Techniques

3 crs.

Prq.: MU 240 or consent of the Instructor.

A required course for Elementary Education majors who have elected music as a concentration or minor and open to other students with permission of instructor. Investigation and study of problems in choral singing, the voice, rehearsal and conducting technique, elementary and advanced choral literature. Melodic, rhythmic, polyphonic dictation is included.

MU 255 Music Materials for Elementary Teachers

3 crs.

Prq.: Consent of the Instructor.

For those who wish to become more actively involved with music in the classroom. Includes singing, use of instruments, listening, reading music, and rhythmic activity.

MU 331 Applied Voice II

1 cr.

Private lessons in voice for those who have satisfied the requirements of MU 131. A continuation of vocalises, breath and tone control, solo material from the literature of German, French, and Italian composers as well as contemporary works in English. One half-hour period weekly. May be repeated for credit.

MU 340 Class Piano III

3 crs.

Prq.: MU 240 or permission of Instructor.

A continuation of Class Piano II, with extended use of advanced keyboard work, transposition and technical control. Beginning knowledge of standard piano literature of Bach, Mozart, and Beethoven.

MU 341 Applied Piano II

1 cr.

Prq.: MU 141 and consent of the Instructor.

For the advanced student of piano who wishes to improve his ability at the keyboard. Material selected according to the ability of the student. One half-hour period weekly. May be repeated for credit.

MU 355 Creative Activities in Elementary School Music

3 crs.

Prq.: Consent of the Instructor.

Practical experience offered in free and directed rhythmic responses, use of melody, percussion and chording instruments, use of the piano, and singing activities.

MU 360 Music Literature II**3 crs.**

Prq.: MU 172 or consent of the Instructor.

An advanced course in the development of music with a study of style, form and structure through analysis, listening, and discussion.

MU 361 Forces in Modern American Music: Jazz**3 crs.**

The course will trace the development of Jazz from 1890 to the present, noting its relation to the mainstream of American Music and its influence on European composers and listeners.

MU 364 Music of the Classical and Romantic Periods**3 crs.**

Prq.: MU 160 or consent of the Instructor.

A study of vocal and instrumental music of these two periods through readings, lecture, listening and discussion.

MU 367 Multi-Ethnic Music of the New World**3 crs.**

An introduction and guide to the history of black American musicians and a survey of other ethnic composers of the Americas. Contributions of the Afro-American style as it has enriched the European-based musical tradition of the United States primarily, and other countries in the New World.

MU 368 Folk Music of Canada**3 crs.**

Open to all students and may be taken as part of a track in Canadian Studies. A non-technical elective which explores the earliest folk music of the Indians and Eskimos through the lively airs of the French and nostalgic ballads of England, Ireland and Scotland. The folk music of other ethnic groups in Canada will also be explored.

MU 413 Advanced Choral Conducting**3 crs.**

Prq.: MU 251 or equivalent.

Investigation and application of advanced conducting techniques to better equip the student to develop a fine choral ensemble.

MU 453 Music for Early Childhood**3 crs.**

Prq.: Permission of Instructor.

Designed for elementary education students, teachers and those interested in primary grades. The study of music as it relates to the developmental process of children of nursery, kindergarten and primary grades. Program planning, activities and materials which help promote musical growth in children and music skills for the teacher. Special attention is given to singing, listening and use of recorded materials.

MU 499 Directed Study in Music**1-3 crs.**

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

MU 502 Research**credit to be arranged**

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

MU 503 Directed Study**credit to be arranged.**

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

MU 511 Advanced Choral Literature**3 crs.**

Prq.: MU 251 or permission of Instructor.

Study and preparation of music from varied historical style periods with primary emphasis on polychordal music, American composers and Avant Garde music.

MU 512 Contemporary Trends in Choral Literature**3 crs.**

Prq.: MU 251 or permission of Instructor.

Study and preparation of the newest styles and techniques of current choral composers ranging from spoken chorus to choral dramatics.

MU 552 Seminar in Music Education Problems

3 crs.

Prq.: MU 251 or permission of Instructor.

After current problems in the music education field have been recognized and analyzed, an attempt will be made to arrive at reasonable solutions which are educationally and musically sound.

MU 553 Contemporary Trends in Music Education

3 crs.

Prq.: MU 255 or consent of Instructor.

Discussion, exploration and evaluation of new projects, ideas and philosophies in music education since 1950. Includes study of Impact, Contemporary Music Project, Yale Seminar, Julliard Repertory Project, Manhattanville Music Curriculum, trends in college curricula, the Music Laboratory as a new structure for learning, and new trends in the art of music and its application to the classroom.

MU 554 Research in Music Education

3 crs.

Sources, methods and types of research used in scholarly inquiry, including techniques used in planning and conducting a survey.

MU 561 Modes of Criticism

3 crs.

Prq.: MU 160 or equivalent.

Critical approaches to music and its relation to the other arts and ideas. The course will stress student thinking about what music is and what music does.

Division of Humanities

English, Foreign Languages, Philosophy & Religious Studies

Divisional Director: Professor Milton Boyle

The Division of Humanities, consisting of the departments of English, Foreign Languages, and Philosophy and Religious Studies, provides instruction in several areas of humanistic endeavor. Through its faculties, the Division offers undergraduate majors in English, Philosophy, French, and Spanish, and minors in these subjects as well as German, Italian, Portuguese, Russian, and Religious Studies. Interested students should consult the departmental listings which follow and are urged to confer with department chairperson regarding the choice of a program of study.

The Division offers a program leading to the degree of Master of Arts in Humanities, which is designed to prepare qualified students for research, further graduate study, and teaching. An undergraduate major in one of the disciplines within the scope of the humanities is normally required for admission to this program.

A program leading to the degree of Master of Arts in Teaching with a concentration in Humanities is also offered. This program is designed primarily for teachers and future teachers of humanities.

For either degree, M.A. or M.A.T., the student is required, with the help of his advisor, to set forth clearly his graduate degree goals and to select courses appropriate to those goals. The program must be approved in all aspects by the advisor and the Humanities Graduate Committee. Applicants must be interviewed by the Director of the Humanities Division.

DIVISIONAL COURSE OFFERINGS:

HU 311 Dante and Medieval Culture in Translation

3 crs.

Life and culture of the Middle Ages approached through a close investigation of Dante's Divine Comedy.

HU 330 English As A Second Language

3 crs.

Theoretical, historical and practical considerations of the teaching of English as a second language.

Department of English

Professor Harold Ridlon, Chairperson

Professors: Joseph DeRocco, Charles McGinnis, Samuel Sheinfeld, Joseph Yokelson

Associate Professors: Marcia Anderson, Frances Guerin, Mary Jarvis,

Donald Johnson, Grant Keener, Clifford Wood

Assistant Professors: Charles Angell, Barbara Apstein, Thomas Curley,

Harold DeLisle, Charles Fanning, Joseph Liggera, James Nerney,

Charles Nickerson, Lois Poule, Paula Vadeboncoeur,

Delija Valiukenas, Judith Stanton

UNDERGRADUATE PROGRAMS

Bachelor of Arts

The program of study for English majors aims to give students an acquaintance with the history and background of English and American literature, an understanding of great literary works, and the ability to analyze, interpret, and appreciate what they read. With a broad foundation in English and American literature and a firm grasp of literary principles and critical techniques, the English major could pursue any of the following fields of interest: graduate study in English; teaching; creative writing; technical writing; advertising; publishing; law.

For students who wish to engage in intensive study of the literature and culture of a particular period while still fulfilling the normal course requirements for the English Major, the Department offers tracks in interdisciplinary options in Medieval, Seventeenth Century, and Nineteenth Century language and literature.

The English department also participates in the interdisciplinary programs in American Studies and Canadian Studies. For specific information about these programs, consult the section of this catalogue entitled Interdisciplinary Programs.

English Major

Majors must achieve a grade of C or above in EN 101, EN 102.

The major must earn a minimum of 36 credits in English which must include three semester hours in each of the following:

English literature before 1800;

English literature after 1800;

American literature.

No more than twelve hours of 200 level courses can be credited toward the major.

Students majoring in English may meet the departmental foreign language requirements by successful completion of twelve hours of course work in ~~one~~ of the following combinations:

1. Six hours of elementary plus six hours of intermediate study in the same foreign language,
2. Six hours of intermediate plus six hours of advanced study in the same foreign language,
3. Six hours of intermediate foreign language study plus six hours of courses in "literature in translation" offered by the Foreign Language Department,
4. Students entering with study equivalent to or more than the intermediate level, must take six hours of advanced study in a foreign language or six hours of courses in "literature in translation."

English Minor

Eighteen credits in English, subject to departmental approval.

GRADUATE PROGRAMS

Master of Arts

The Department of English offers a program leading to the degree of Master of Arts in English. An undergraduate major in English, with at least twenty-four hours of above average work in the discipline is normally required for admission to this program. Students with deficient academic backgrounds are sometimes conditionally accepted into the program with the stipulation that these deficiencies be made up before work actually credited to the degree begins.

In addition to meeting general degree requirements, the student must complete courses his advisor deems appropriate to his degree program, including at least one graduate seminar, and the course entitled "Theory and Discipline of English." Upon acceptance to the graduate program the student will be given a set of guidelines for graduate study in English which further clarify the procedures involved in earning a degree in that discipline.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.A. degree requirements: all courses in the 100 and 200 levels and EN 499.

Master of Arts in Teaching

The Department of English offers a program leading to the degree of Master of Arts in Teaching with a concentration in English. The program is designed primarily for teachers and future teachers of English. It also prepares students for further graduate work in English.

In addition to meeting general degree requirements, the student must complete the departmental concentration requirement by electing courses appropriate to his degree program and approved by his advisor.

Additional information regarding the degree may be found in the Graduate School section of this catalogue.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.A.T. degree requirements: all courses in the 100 and 200 levels and EN 499.

COURSE OFFERINGS*

Successful completion of EN 101, EN 102 (or their equivalent) is a prerequisite to all other English courses.

EN 101, 102 English Composition

3 crs. for each semester.

The aim of English Composition is to develop greater awareness of the potential of the language, to encourage responsibility for its more effective use, and to provide opportunity for frequent directed practice in writing. Through the use of literary models such as essay, poem, short story, novel, and drama, students will be trained to think, speak, read and write more effectively. EN 101 is prerequisite to EN 102.

EN 200 Advanced Composition

3 crs.

Expository writing is taught through frequent practice, analysis of models, and criticism by instructor and students. Opportunity is available for the student to develop his writing in any specific area he chooses, but emphasis will be on satire, argument, critical analysis, exposition, and description. Some attention will be given to the major developments in English prose style since 1600.

EN 201 Technical Writing

3 crs.

This course, geared closely to work being done by individual students in other disciplines, will help them develop techniques of composition essential to sophisticated written communication in those fields. Cooperation with faculty members in the natural sciences, behavioral sciences, and social sciences will be used to achieve clear, professional, written expression.

EN 211, 212 Literary Classics of Western Civilization

3 crs. for each semester.

Through classic examples of epic, myth, sacred history, parable, allegory, tragic and comic drama, philosophical dialogue, satire, lyric, and novel, the student will be introduced to the principal literary forms through which great writers, from ancient times to the twentieth century, have contributed to the religious, intellectual, moral, and esthetic traditions of Western culture.

EN 214 Classical Literature in Translation

3 crs.

The course will study the important Greek and Roman Writers including, among others, Homer, Sophocles, Plato, Euripides, Cicero, Horace, and Virgil. The focus will be on rediscovering the grandeur and glory of classical civilizations.

EN 215 Comparative Drama

3 crs.

A study of plays of different periods dealing with the same mythological or historical themes. Included will be plays on the Oedipus theme, from Sophocles to Cocteau; plays about the House of Atreus, from Aeschylus to Sartre; plays about Anthony and Cleopatra, from Shakespeare to Shaw; and plays about Joan of Arc, from Schiller to Anouilh. The larger purpose of the course will be to explore the freedom within limits of an artist who chooses to work with established plot materials.

EN 221, 222 Major English Writers

3 crs. for each semester.

Representative works by the major English writers will be studied both formally and historically to develop an understanding of the genres, styles, and themes which characterize English imaginative and critical writing. The first semester will examine works from the Anglo-Saxon period to the eighteenth century; the second, works of the nineteenth and twentieth centuries.

EN 225 The Theme of Love

3 crs.

Various literary treatments of the theme of love will be approached through such works as the following: Chaucer, *Troilus and Criseyde*; Donne, Poetry; Shakespeare, *Romeo and Juliet*, *Anthony and Cleopatra*; Dryden, *All for Love*; Byron, *Don Juan*, *Cantos I-IV*; Bronte, *Wuthering Heights*; Browning, *Poems*; Henry James, *The American* or *The Portrait of a Lady*; Lawrence, *Sons and Lovers*; Hemingway, *A Farewell to Arms*.

EN 230 Creative Writing

3 crs.

Fiction, non-fiction, verse, drama or any experimental forms may be undertaken by the student. Class discussions will center on the examination of both professional and student efforts. Frequent conferences will be held with individual students.

*See page 50 for general information regarding course offerings.

EN 231, 232 Major American Writers**3 crs. for each semester.**

A general survey of American Literature from the colonial beginnings to the present. Writers such as Franklin, Edwards, Irving, Poe, Hawthorne, Emerson, Whitman, Dickinson, Twain, James, Frost, Eliot, Faulkner, and Hemingway will be studied in their social and cultural contexts.

EN 235 The Short Novel**3 crs.**

Prq.: consent of the Instructor.

Works selected from such writers as James, Mann, Kafka, and Chekhov.

EN 238 The Short Story**3 crs.**

The primary focus will be on the examination of the relationship between form and content in several British, American, and continental short stories. A secondary concern will be the historical development of the genre.

EN 241, 242 Shakespeare**3 crs.**

A general introduction to Shakespeare's plays set against the background of the times. Representative selections from the tragedies, comedies, and histories will be studied in detail.

EN 251 Literary Figures and Problems**3 crs.**

The course will provide the sophomore student with the opportunity to study particular literary figures and problems, viewing them from a broad historical and critical perspective.

EN 252 Literary Types**3 crs.**

The course will approach literature by type, meaning 'type' to signify both genre and form. A semester's study might focus on biography and autobiography, the novel, the epic, comedy, tragedy, or satire. The reading will include diverse works representative of a particular type.

EN 261 Film Study: Introduction to the Art**3 crs.**

The course will provide the student with a critical evaluation of major American and foreign films and directors from the silent era to the present. The study will be directed toward developing in the student standards of critical awareness and esthetic appreciation. In addition to film viewing, there will be readings in film theory, interpretation, and criticism.

EN 262 Film Study: Literature Into Film**3 crs.**

The course will focus on the way in which literature is adapted to film. Viewing and reading works in both media will be required.

EN 280 Journalism**3 crs.**

Students will be helped to develop skills in copyediting and proofreading with special emphasis given to objective news story writing. Some attention will be given to dramatic criticism and sports writing. The workshop approach will be used.

EN 283, 284 Major Canadian Writers in English**3 crs. for each semester.**

A survey of major Canadian writings in English from the beginning to the present, placing the works against the background of general Canadian culture.

EN 301 Writing and the Teaching of Writing**3 crs.**

Writing, criticism, creativity. Student participation in criticism as a learning device and as a means to a reasonable load for the teacher. Objective is to improve the student's writing skill by the same techniques he can use in teaching the skill. Text by Don Murray.

EN 305 History of the English Language**3 crs.**

Origins and development of English. Selected readings in Old and Middle English.

EN 309 Early American Literature**3 crs.**

The course will focus on selected readings from Colonial beginning through James Fenimore Cooper. Offered in alternate years.

- EN 311 The Negro in U.S. Literature** 3 crs.
Prq.: EN 231 or EN 331 or consent of the Instructor.
Autobiographies and fiction beginning chronologically with *The Life of Frederick Douglass*; particular attention will be paid to *Uncle Tom's Cabin*, *Native Son*, and *Invisible Man*.
- EN 312 Studies in Modern British Fiction** 3 crs.
Prq.: EN 222 or consent of the Instructor.
Readings in selected twentieth-century British novelists, such as E.M. Forster, D. H. Lawrence, James Joyce, and Graham Greene.
- EN 314 Medieval English Literature** 3 crs.
Prq.: EN 211, or EN 221 or consent of the Instructor.
Selected readings in non-Chaucerian writing: Langland, Gower, romance, lyrics, drama.
- EN 320 Chaucer** 3 crs.
Prq.: EN 222 or consent of the Instructor.
Troilus and Criseyde and selected readings from the *Canterbury Tales*.
- EN 321 The Age of Pope** 3 crs.
The literature of the neo-classical period, with emphasis on the works of Pope, Swift, Gay, Addison and Steele.
- EN 322 The Age of Johnson** 3 crs.
The writings of several major literary figures, such as Johnson, Boswell, Fielding, Richardson and others.
- EN 323 Linguistics** 3 crs.
The generative-transformational theory of syntactic structures as applied to the English language. Selected readings on various aspects of linguistics.
- EN 324 Linguistic History of the English Language** 2 crs.
Readings and linguistic analysis of Old, Middle, and Modern English. Four periods weekly for one quarter.
- EN 329 Modern American Fiction** 3 crs.
Prq.: EN 232 or consent of the Instructor.
The course will focus on short fiction and the novel between the two World Wars.
- EN 330 Recent American Fiction** 3 crs.
The course will focus on short fiction and the novel since World War II. Such writers as Mailer, Bellow, Updike, Roth, and others will be studied.
- EN 331 U.S. Literature in the Nineteenth Century** 3 crs.
Selected readings in C.B. Brown, Cooper, Hawthorne, Poe, Emerson, Thoreau, Whitman, and Dickinson.
- EN 332 U.S. Literature in the Nineteenth Century** 3 crs.
Prq.: EN 231 or EN 331.
The novels and tales of Melville, Twain, Hawthorne, and James.
- EN 333 Realism and Naturalism in American Literature** 3 crs.
Studies in the fiction of Howells, James, Stephen Crane, Frank Norris, Theodore Dreiser, and in the twentieth-century extensions of realism in the novels of writers such as Sinclair Lewis, Sherwood Anderson, Dos Passos and Farrell. Attention will also be paid to the proselytizing criticism of the first generation of realists, notably James's prefaces and Howells' essays.
- EN 335 Elizabethan and Jacobean Drama** 3 crs.
Reading and discussion of a number of plays with attention to contemporary social developments as well as to the historical development of the English play.

EN 340 Literature of the English Renaissance**3 crs.**

The non-dramatic literature of the Age of Shakespeare including the reading of works by such writers as Sidney, Spenser, Nashe, Marlowe, and Drayton. Although the emphasis will be on textual analysis, the historical, social, and cultural background of the period will also be considered.

EN 341 Literature of the Continental Renaissance**3 crs.**

Selected works of Petrarch, Boccaccio, Machiavelli, Erasmus, Castiglione, Rabelais, Cellini, Montaigne, Cervantes, and Ronsard representing prevailing literary themes and techniques. Lectures and discussions on the art, history, philosophy, and music of the age will be offered by faculty in these disciplines.

EN 342 Shakespeare: Histories and Comedies**3 crs.**

Shakespeare: Histories and Comedies provides the student of Shakespeare with examples of Shakespeare's art in dominant Renaissance dramatic forms and with some of his recurring thematic concerns. In addition study of the Histories and Comedies demonstrates Shakespeare's growth in the dramatic use of language. Plays for study will include the Comedy of Errors, Two Gentlemen of Verona, Much Ado About Nothing, As You Like It, Twelfth Night, Richard III, Richard II, Henry IV, Parts I and II, and Henry V.

EN 343 Shakespeare: Tragedies and Late Plays**3 crs.**

Shakespeare: Tragedies and Late Plays offers the student of Shakespeare studies in the various dimensions of the tragic vision of man. In addition, study of the Late Plays provides the student with examples of dramatic works that proceed beyond the tragic dimension. Selected plays will include Hamlet, King Lear, Othello, Macbeth, Antony and Cleopatra, Measure for Measure, The Winter's Tale, and The Tempest.

EN 346 Southern Literary Renaissance**3 crs.**

Beginning with the Fugitives in the 1920's (Robert Penn Warren, Allen Tate, John Crowe Ransom, and Donald Davidson primarily) and their concern with the problem of the Southern writer's identity as a Southerner and an artist, the focus will center on the writings of such contemporary figures as William Faulkner, Tennessee Williams, Katherine Anne Porter, Flannery O'Connor, Carson McCullers, Eudora Welty, and Peter Taylor.

EN 350 Modern English Novel**3 crs.**

A selective survey of major contributors to the English novel from Joseph Conrad through the school of the "Angry Young Men." Major attention will be given to the analysis of specific texts.

EN 353 Modern European Drama**3 crs.**

Main forces in Modern European drama starting with Ibsen.

EN 356 Modern American Drama**3 crs.**

Selected plays of dramatists from O'Neill to Albee.

EN 360, 361 The English Novel**3 crs. for each semester.**

The development of the English novel, including the works of Defoe, Richardson, Fielding, Smollett, Sterne, Austen, and Scott in the first semester, and Dickens, the Brontës, Thackeray, Eliot, Trollope, Conrad, and Hardy in the second semester.

EN 365 Victorian Prose and Poetry**3 crs.**

The major emphasis will be placed on the poetry of Tennyson, Browning, and Arnold, but the works of other nineteenth-century poets such as Hopkins and Hardy will also be read and discussed. The essays of Carlyle, Arnold, Newman, Huxley, and others will be read in conjunction with the poetry.

EN 366 Tennyson, Browning, and Arnold**3 crs.**

These major nineteenth-century authors will be studied in some detail, with particular reference to the historical, social, and cultural milieu within which they wrote.

EN 367 English Literature of the Late Victorian and Edwardian Periods**3 crs.**

The major writers of the late nineteenth and early twentieth centuries will be examined from an esthetic, social, and intellectual point of view with readings in such novelists as Gissing, James, Wilde, Beerbohm, Carroll, Wells, Hardy, Corvo, Forster, and Conrad, and such poets as Rossetti, Swinburne, Morris, Hopkins, and Yeats.

EN 370 Seventeenth Century Literature

3 crs.

The course is an introduction to the prose and poetry of the seventeenth-century in England, exclusive of Milton. Such writers as Donne, Jonson, Bacon, Burton, Browne, and Dryden will be examined, and various persistent elements, such as the classical influence, will be explored.

EN 380 Milton

3 crs.

The main poetical works of Milton: *Paradise Lost*, *Paradise Regained*, and *Samson Agonistes*, the minor poetic works, and selected prose.

EN 383 Modern Irish Literature

3 crs.

Irish writing from 1890 to the present, with special emphasis on the works of Yeats, Synge, O'Casey, Joyce, O'Connor, and O'Faolain.

EN 384 Modern Canadian Fiction in English

3 crs.

Intended as a broad introduction to the growing achievement of twentieth-century Canadian Fiction, this course will stress the novels and short stories of such writers as Margaret Atwood, Morley Callaghan, Frederick Grove, Margaret Laurence, Hugh McLennan, Brian Moore, Farley Mowat, Mordecai Richler, Charles Roberts, Sinclair Ross, and will attempt to examine their works against their national background and within the framework of the world community of fiction.

EN 385 Canadian Poetry in English

3 crs.

A broad survey of recent Canadian Poetry from 1945-1970 with particular emphasis on those poets most vital in shaping a new and exciting international reputation for Canadian Poetry: Gwendolyn MacEwen, Margaret Atwood, Leonard Cohen, John Newlove, Earle Birney, James Reaney, George Bowering, F. R. Scott. Texts such as *Poetry Between the Wars*, edited by Milton Wilson, and *Poets of Contemporary Canada*, edited by Eli Mandel will be used.

EN 386 English Romantic Poets

3 crs.

Selected poetry and prose of Wordsworth, Coleridge, Shelley and Keats will be studied with the principal object of understanding the character and modes of expression of each poet's imaginative vision. Consideration will be given to historical background and to developments in philosophy and esthetic theory which have a direct bearing on Romantic poetry.

EN 387 British Commonwealth Literature

3 crs.

Literature of the British Commonwealth nations will be studied. In a given year, the emphasis may be on such literature as Canadian, African, Australian, or Indian.

EN 390 History of Literary Criticism

3 crs.

The history of literary criticism from Aristotle to the present. Emphasis will be placed on those persistent esthetic, psychological, social, and cultural patterns which have helped shape the literature of our own age.

EN 391 Modern Literary Criticism

3 crs.

Several twentieth-century approaches to literary analysis, interpretation, and evaluation. Particular attention will be given to literary concepts derived from psychoanalysis, sociology, anthropology, semantics, philosophy, and theology. Such topics as existentialist criticism, the "new criticism," and the theory of myth and symbol will be considered.

EN 393 Modern British Poetry

3 crs.

The major British poets of the twentieth century, with particular emphasis on the works of Hopkins, Yeats, Eliot, and Thomas.

EN 394 Modern American Poetry

3 crs.

The major American poets of the twentieth century, with particular emphasis on the works of Robinson, Frost, Crane, Auden, Williams, and Stevens.

EN 395 Studies in Recent American Poetry

3 crs.

Intensive study of some of the major figures in American poetry of the past ten or fifteen years: Theodore Roethke, Robert Lowell, and John Berryman will certainly be included. Also, three or four poets to be selected

from the following list: Richard Eberhart, Richard Wilbur, W. D. Snodgrass, W. S. Merwin, Sylvia Plath, James Wright, James Dickey, Randall Jarell, Gary Snyder.

EN 397 Film Study: The Director's Art **3 crs.**

The course will offer an intensive study of the works of one or more directors who have significantly extended or added to film vocabulary.

EN 398 Film Study: Genres **3 crs.**

The course will focus on films that have contributed to the definition of such cinematic genres as the western, the gangster movie, the documentary, the light comedy, and others.

EN 400 Techniques of Literary Research **3 crs.**

Research procedures, with special reference to the materials and methods of literary study and publication. Various critical approaches to literature will be examined, and some evaluation of scholarly procedure will be made.

EN 420 English Education Seminar **3 crs.**

Limited in enrollment to seniors contemplating secondary school teaching. The problems of English education in a rapidly changing social, cultural, and intellectual environment. Reports, small group discussions, and meetings with professionals in the field.

EN 491 Seminar in Canadian Literature **3 crs.**

This seminar, open to qualified juniors, seniors, honors candidates, and graduate students, will pursue in depth particular themes and authors in Canadian literature, the topic changing from year to year.

EN 494 Seminar **3 crs.**

The seminar will treat selected topics in literature and related areas of study.

EN 495 Seminar in English Literature **3 crs.**

This seminar, limited to seniors, honors candidates, and graduate students, will pursue in depth certain themes and authors in English literature, the topic changing from year to year.

EN 496 Seminar in American Literature **3 crs.**

This seminar, limited to seniors, honors candidates, and graduate students, will pursue in depth certain themes and authors in American literature, the topic changing from year to year.

EN 497 Seminar in World Literature **3 crs.**

This seminar, limited to seniors, honors candidates, and graduate students, will pursue in depth certain themes and authors in world literature, the topic changing from year to year.

EN 498 Internship in English **3-15 crs.**

Prq.: Consent of Department.

Off-campus work-study experience in areas related to the expanding discipline of English. In-depth exposure to such fields as editing, journalism, media, personnel, public relations, technical writing and the like. Effort is made through this program to expand the occupational potential of the English major.

EN 499 Directed Study in English **1-3 crs.**

Prq.: Consent of the Department.

Open to juniors and seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

EN 500 Theory and Discipline of English **3 crs.**

This course will examine the backgrounds and techniques of scholarship in the field of literature. Some acquaintance with critical approaches to literature, as well as comprehensive experience in the major genres and periods of English and American literature, will be assumed.

EN 502 Research **credit to be arranged.**

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

EN 503 Directed Study

credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

EN 529 Donne and the Metaphysical Poets

3 crs.

An intensive study of those seventeenth-century poets known as the metaphysicals: Donne, Herbert, Vaughan, Marvell and Crashaw.

EN 534 Studies in Eighteenth-Century British Poetry

3 crs.

A study of the development of British poetry in the eighteenth century, focusing on such poets as Pope, Gay, Thomson, Johnson, and Cowper.

EN 537 Studies in British Romanticism

3 crs.

A study of the prose and poetry of the romantic period, focusing on such figures as Coleridge, Wordsworth, Byron, Hazlitt, Lamb, DeQuincey, and others.

EN 541 Studies in the Novel

3 crs.

A close reading of the major and minor works of several novelists chosen from a single period. Emphasis will be placed on the development of each novelist within a specific literary and historical context. The period under consideration will vary from year to year.

EN 551 American Transcendentalism

3 crs.

An investigation of the development and influence of American Transcendentalism in the literature of Emerson, Thoreau, Alcott, Margaret Fuller, Theodore Parker, and others.

EN 562 Studies in Modern Drama

3 crs.

An investigation of the development of various movements of modern drama in the works of Ibsen, Strindberg, Shaw, O'Neill, Pirandello, Beckett, Genet, Brecht, and other experimental and traditional playwrights.

EN 570 Graduate Seminar in American Literature

3 crs.

An in depth study of a particular author, group of authors, or theme in American literature. Topics will change from year to year.

EN 580 Graduate Seminar in English Literature

3 crs.

An in depth study of a particular author, group of authors, or theme in English literature. Topics will change from year to year.

EN 590 Graduate Seminar in World Literature

3 crs.

As in depth study of a particular author, group of authors, or theme in world literature. Topics will change from year to year.

Department of Foreign Languages

Assistant Professor: Jacqueline Enos, Chairperson

Professor: Wayne Judah

Associate Professors: Robert Arruda, Robert Briggs, Joseph Giannini

Assistant Professors: Anthony Cotugno, Dale Dawley, Stanley Hamilton,
Lenore Padula, Christiana Reordan, Barbara Ward

UNDERGRADUATE PROGRAMS

Bachelor of Arts

The Foreign Language Department offers students an opportunity to gain practical working knowledge of one or more of six foreign languages. Students may choose any of these six languages offered by the department unless otherwise restricted by the requirements of their academic major. All students should check the specific foreign language requirement of their academic major.

The department currently offers undergraduate majors in French or Spanish with academic minors possible in French, German, Spanish, Italian, Russian, and Portuguese. The department majors seek to develop a fluent command of the four language skills, and a broad acquaintance with the salient characteristics of the literature and civilization of the language being studied.

A grade of C or above in the 181-182 course sequence is required for continuation as a language major. 36 semester hours are required for a foreign language major. Foreign language majors are required to take all courses in numerical sequence, unless otherwise arranged with an advisor subject to approval by the head of the department. No foreign language major with a secondary education minor, will be allowed to enroll in ED 490 without previously having taken a methods and materials course, unless a waiver has been granted by the department.

For all prerequisites, equivalent course credit or preparation will be accepted.

French Major

LF 181-182, remaining courses to be completed from department offerings.
(LF 381 and LF 382 with a C or better if Secondary Education minor.)

Spanish Major

LS 181-182, remaining courses to be completed from department offerings.
(LS 281 and LS 282 with a C or better if Secondary Education minor.)

Language Minor

Language minors are required to take 18 semester hours beginning with the 151-152 level course. The choice and subsequent courses may be determined in consultation with the department head.

GRADUATE PROGRAM

Master of Arts in Teaching

The Department of Foreign Languages offers a program leading to the degree of Master of Arts in Teaching with a concentration in Foreign Languages. The Department requires an interview of all prospective candidates before making its final recommendation regarding admission to the program. The latter is designed primarily for teachers and future teachers of foreign languages. It also prepares students for further graduate work in foreign languages. In addition to meeting general degree requirements, the student must complete the departmental concentration requirement (a minimum of 18 graduate credits in a single language) by electing courses appropriate to the degree program and approved by the advisor. These courses need not be taken in sequence. Additional information may be found in the Graduate School section of this Catalogue.

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.A.T. degree requirements: all courses in the 100 level and FL 499.

COURSE OFFERINGS*

FRENCH

LF 101, 102 Elementary French 3 crs. for each semester.

An introduction to the essentials of written and spoken French.

LF 151, 152 Intermediate French 3 crs. for each semester.

Prq.: LF 102.

Stress on essential grammatical points, oral work, and reading knowledge of the language.

LF 181, 182 Advanced French 3 crs. for each semester.

Prq.: LF 152.

A concentration on more advanced aspects of the spoken and written French language. Oral practice through individual classroom participation. Conducted in French.

LF 201 French Literature of the Middle Ages 3 crs.

Prq.: LF 182.

A survey of representative works of the Middle Ages. Conducted in French.

LF 211 Twentieth-Century French-Canadian Writers 3 crs.

Prq.: LF 151-152 or its equivalent.

A study in depth of certain Canadian writers in French, with special emphasis on the "rural" novel and the poetry of the search for an identity. Conducted in French.

LF 222 Introduction to French-Canadian Literature 3 crs.

Prq.: LF 151-152 or its equivalent.

A survey of literature of Canada written in French, from writing of the clergy and missionaries to the novelists, poets and dramatists of the present day. Conducted in French.

LF 231 Eminent Realists and Naturalists in 19th century French Literature in Translation 3 crs.

A study of realism and naturalism (1850-1900), with special attention given to Flaubert, the Goncourts, Maupassant, Zola, and Huysmans.

LF 241 French Literature of the Absurd in Translation 3 crs.

A study of French "absurd" literature in translation, from Flaubert's *A Simple Heart* to "anti-literature" of the "new" novel. Emphasis on theatre.

LF 252 Sixteenth Century French Literature 3 crs.

Prq.: LF 201.

A study of the poetry, prose, and theatre of the sixteenth century, noting the transition from the late Middle Ages through the Renaissance. Conducted in French.

LF 261 Introduction to the Civilization and Language of French-Canada 3 crs.

Prq.: LF 151-152 or its equivalent.

A composite view of the extension of French civilization in Canadian history, daily life, arts and sciences, literature, technology and above all, a study of differences in language usage. Conducted in French.

LF 281 French Conversation and Civilization 3 crs.

Prq.: LF 182.

Improvement of oral expression and pronunciation. French Civilization discussion topics for vocabulary building and application of structures learned. Conducted in French.

LF 301 Seventeenth Century French Literature 3 crs.

Prq.: LF 252.

The principal historical events and representative authors and genres of France of the seventeenth century will be studied with the object of understanding Classicism as a literary movement. Conducted in French.

*See page 50 for general information regarding course offerings.

LF 352 Eighteenth Century French Literature

3 crs.

Prq.: LF 301.

The literary contributions of the Enlightenment and Encyclopedists to the French Revolution and pre-Romanticism. Conducted in French.

LF 381 Applied French Linguistics and Phonetics

3 crs.

Prq.: LF 182.

A linguistic approach to the sounds of the French language with emphasis on a mastery of the elements of correct standard pronunciation. Conducted in French.

LF 382 Advanced French Composition and Grammar

3 crs.

Prq.: LF 381.

A thorough study of French grammar to develop written and oral proficiency in the French language. Conducted in French.

LF 401 Nineteenth Century French Literature

4.5 crs.

Prq.: LF 352.

Through representative works, the entire nineteenth century will be surveyed with special emphasis on principal literary movements: Romanticism, Realism, and Symbolism. Two periods weekly for three quarters. Conducted in French.

LF 451 Twentieth Century French Literature

3 crs.

Prq.: LF 352.

A discussion of literary trends and readings of well-known authors. Individual reports. Barres, France, Gide, Proust, Claudel, Romain, Sartre, Camus. Conducted in French.

LF 495 Seminar in French Literature

3 crs.

Prq.: permission of the Instructor.

Primarily for French majors or minors of senior standing. Honors candidates or graduate students. The seminar will pursue, in depth, certain themes and authors in French literature. The topics will change from year to year. Offered as needed. Conducted in French.

GERMAN

LG 101, 102 Elementary German

3 crs. for each semester.

An introduction to the study of the German language. Emphasis on correct pronunciation and basic grammar.

LG 151, 152 Intermediate German

3 crs. for each semester.

Prq.: LG 102.

A systematic review of basic German grammar. Graded reading selections and an introduction to aspects of German culture.

LG 181, 182 Advanced German

3 crs. for each semester.

Prq.: LG 152.

Introduction to a more advanced level of the literature. Representative authors will be read and discussed.

LG 191, 192 Scientific German

3 crs. for each semester.

Prq.: LG 102.

An introduction to the reading and translating of scientific material. Open to science majors as a substitution for LG 151, 152.

LG 201, 202 Survey of German Literature

3 crs. for each semester.

Prq.: LG 182.

German literature from its earliest beginnings to the present day. Representative works of the principal literary periods will be read and discussed. Conducted in German.

- LG 282 German Conversation and Civilization** **3 crs.**
 Prq.: LG 182.
 Designed to develop further the student's command of spoken German. Discussion topics will center upon aspects of German civilization and culture. Conducted in German.
- LG 301, 302 Modern German Literature** **3 crs. for each semester.**
 Prq.: LG 202.
 Ideas and literary currents of the modern period as expressed in the works of representative authors. Conducted in German.
- LG 310 The Modern German Novel in Translation** **3 crs.**
 The German novel since World War I with emphasis on works by Thomas Mann, Herman Hesse, Gunter Grass, Heinrich Boll.
- LG 320 Contemporary German Drama in Translation** **3 crs.**
 Trends in twentieth century drama before and after World War II including works by Bertold Brecht, Friedrich Durrenmatt, Peter Weiss, and others.
- LG 330 Major German Writers in Translation** **3 crs.**
 Selected works by major German writers.
- LG 340 The German Novella in Translation** **3 crs.**
 The novella as a literary genre and selected works by major writers.
- LG 351 German Romanticism** **3 crs.**
 Prq.: LG 202.
 Romanticism as a literary movement. A study of its philosophical basis, themes and forms as reflected in representative works of the period. Conducted in German.
- LG 460 Seminar in German Literature** **3 crs.**
 Prq.: Consent of Instructor.
 Study of a particular author and his works and/or selected literary movements. Topics vary; course may be repeated; limited enrollment. Conducted in German.

ITALIAN

- LT 101, 102 Elementary Italian** **3 crs. for each semester.**
 An aural-oral approach to the grammar of the Italian language. Emphasis is on the mastery of correct pronunciation and of fundamental grammatical points to ensure a basic oral, reading, and written command of the language.
- LT 151, 152 Intermediate Italian** **3 crs. for each semester.**
 Prq.: LT 102.
 A continuation of Elementary Italian, with stress on essential grammatical features, oral work, and reading and writing development in the language.
- LT 181, 182 Advanced Italian** **3 crs. for each semester.**
 Prq.: LT 152.
 A review of basic grammar and presentation of more advanced structural elements. Stress on improvement of compositional and aural-oral skills. Varied cultural reading selections. Conducted in Italian.

PORTUGUESE

- LP 101, 102 Elementary Portuguese** **3 crs. for each semester.**
 An introduction to the basic skills of reading and writing, and the development of aural comprehension and correct oral pronunciation.

LP 151, 152 Intermediate Portuguese

3 crs. for each semester.

Prq.: LP 102.

A review of basic grammar and pronunciation and a more advanced study of these two aspects of the language. Reading, writing, and oral proficiency will be stressed.

LP 181, 182 Advanced Portuguese

3 crs. for each semester.

Prq.: LP 152.

Stress on improvement of compositional and aural-oral skills. Literary texts from Brazilian and Portuguese literature. Conducted in Portuguese.

RUSSIAN

LR 101, 102 Elementary Russian

3 crs. for each semester.

Introduction to Slavic Civilization. Familiarization with Russian script, pronunciation, and basic structure. Programmed units leading to reading of newspapers and short stories of Russian masters.

LR 151, 152 Intermediate Russian

3 crs. for each semester.

Prq.: LR 102.

Review and expansion of fundamentals with more detailed reading and analysis of structure. Scientific Russian or in other majors as desired.

LR 181, 182 Advanced Russian

3 crs. for each semester.

Prq. LR 152.

Translation of scientific and literary texts, directed reading and reports. Translation methods and practice. Improving oral and writing skills. Conducted in Russian.

SPANISH

LS 101, 102 Elementary Spanish

3 crs. for each semester.

An introduction to the essentials of Spanish pronunciation and grammar. Reading, writing, aural and oral proficiency will be stressed.

LS 151, 152 Intermediate Spanish

3 crs. for each semester.

Prq.: LS 102.

A review of basic grammar and correct pronunciation to further an aural-oral command of the language. Hispanic readings will be introduced.

LS 181, 182 Advanced Spanish

3 crs. for each semester.

Prq.: LS 152.

A more detailed study of Spanish grammar. Vocabulary development, correct pronunciation, and improved aural-oral skills. Reading from Hispanic world. Conducted in Spanish.

LS 201, 202 Survey of Spanish Literature

3 crs. for each semester.

Prq.: LS 182.

Major literary movements, works and authors of penninsular Spanish literature from earliest times to the present. Offered in alternate years with LS 251, 252. Conducted in Spanish.

LS 251, 252 Survey of Spanish-American Literature

3 crs. for each semester.

Prq.: LS 182.

A representative study of the literature of the Colonial period, the independence period, the eighteenth century, Modernism, and the contemporary period. Offered in alternate years with LS 201, 202. Conducted in Spanish.

LS 281 Advanced Composition

3 crs.

Prq.: LS 182.

Development of individual written expression. Utilization of literary texts as an approach to composition by focusing on vocabulary, analysis of style and context. Conducted in Spanish.

- LS 282 Spanish Phonetics and Conversation** 3 crs.
Prq.: LS 281.
Improvement of oral proficiency by a systematic study of the sounds of correct pronunciation. Conducted in Spanish.
- LS 292 Spanish Civilization** 3 crs.
Prq.: LS 182.
An introduction to the history, geography, social institutions, and culture of Spain. Assigned compositions. Conducted in Spanish.
- LS 301 The Golden Age of Spanish Literature** 3 crs.
Prq.: LS 202.
A study of the poetry, prose and theatre from the second half of the sixteenth century to the Baroque period. Emphasis will be on the mystics. Gongora, Lope de Vega, Calderon, and Quevedo. Conducted in Spanish.
- LS 351 Cervantes** 3 crs.
Prq.: LS 202.
A study of the man and his works, with special emphasis on Don Quixote. Conducted in Spanish.
- LS 381, 382 The Middle Ages** 3 crs.
Prq.: LS 202.
A study of the evolution of Spanish literature through the first half of the sixteenth Century. Romances, Poema del Cid, La Celestina, El Libro de Buen Amor. Conducted in Spanish.
- LS 401 Nineteenth Century Spanish Literature** 4.5 crs.
Prq.: LS 202.
The Romantic and Realist Movements. Representative works of the novel, poetry, and drama. Caballero, Alarcon, Galdos, Clarin, Bazan, Ibanez, Duque de Rivas, Gutierrez, Espronceda, Larra. Three periods weekly for three quarters. Conducted in Spanish.
- LS 451 Twentieth Century Spanish Literature** 4.5 crs.
Prq.: LS 202.
The Spanish novel, essay, poetry and drama from the Generation of '98 to the present. Unamuno, Baroja, Azorin, Machado, Jimenez, Lorca, Casona, Cela. Three periods weekly for three quarters. Conducted in Spanish.

- FL 499 Directed Study in Foreign Language** 1-3 crs.
Prq.: Consent of the Department.
Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.
- FL 502 Research** credit to be arranged.
Prq.: Approval of the Advisor.
Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.
- FL 503 Directed Study** credit to be arranged.
Prq.: Approval of the Advisor.
Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

Department of Philosophy & Religious Studies

Associate Professor David Cheney, Chairperson

Professor: Milton Boyle

Associate Professors: Joseph Corkery, Achille Joyal

Assistant Professors: Edward James, Steven Sanders

Philosophical inquiry aims at clear, logical, critical thinking about a variety of perennial human concerns. These include questions about values, the nature of knowledge and truth, the meaning of life, the understanding of experience, the possibility of religious knowledge, and many others. The Department offers courses in the main problems of philosophy, the history of philosophy, and the methods of philosophy as a mode of critical thinking.

UNDERGRADUATE PROGRAMS

Bachelor of Arts

The department offers a major program in philosophy which involves study of the history of philosophy and the main problems of ethics, epistemology—metaphysics, logic and language and other elective areas.

Philosophy Major

A minimum of ten philosophy courses (30 credits), with at least eight courses (24 credits) at the 300 or 400 level. A grade of "C" or higher is required in all philosophy course work contributing to the major. Philosophy majors intending to go to graduate school should develop proficiency in either French or German.

Satisfactory completion of at least one course in each of the following areas is required of all philosophy majors.

PL 381, PL 382 or PL 385; PL 386, PL 387 or PL 410; PL 200 or
PL 324; PL 210 or PL 321; PL 310 or PL 405; PL 450.

Philosophy Minor

For a minor in philosophy, a student must complete six philosophy courses (18 credits). Interested students should contact the chairperson in order to discuss an individual program relevant to the academic major.

Religious Studies Minor

The interdisciplinary nature of the study will be exploited by the coordination of courses offered by several departments of the college. Flexibility is desired and each student is encouraged to design his own program subject to his minor advisor's approval. For a minor, students must complete six courses (18 credits) in religious studies, including RE 100 Introduction to Religious Studies and a course in at least three of the four areas listed below. One of these courses is to be in the study of non-Western religion.

- I. History of Religion/Comparative Religion: RE 201 Comparative Religion: Western, RE 202 Comparative Religion: Eastern, RE 251 Religion in Contemporary America, AN 207 Primitive Religion.
- II. Religious Literature: RE 221 Introduction to the Old Testament, RE 222 Introduction to the New Testament, EN 497 Seminar (Topics to be specified)
- III. Religion and Philosophy: PL 323 Philosophy of Religion, PL 450 Philosophy Seminar (Topics to be specified)
- IV. Scientific Study of Religion: AN 207 Primitive Religion, SO 204 Sociology of Religion, SO 321 Religion and Society in Asia

GRADUATE PROGRAMS

Master of Arts

Master of Arts in Teaching

The Department does not offer a program in philosophy or religious studies at the master's degree level, but does participate in programs leading to the degrees of Master of Arts in Humanities and Master of Arts in Teaching with a concentration in humanities. Philosophy and religious studies courses, if approved by the faculty advisor, may be taken in partial fulfillment of master's degree requirements.

Additional information regarding these degrees may be found in the Graduate School section of this Catalogue, as well as under the Division of Humanities.

The department offerings listed below include the following courses which may **not** be used in partial fulfillment of master's degree requirements: all philosophy courses numbered in the 200 and 300 levels, PL 499, RE 100, and RE 499.

COURSE OFFERINGS*

PHILOSOPHY

Philosophy courses at the 200-level have no prerequisite. All other philosophy courses have a common prerequisite of one three credit course in philosophy, except for PL 450, PL 499, PL 502 and PL 503 which require consent of the instructor and/or department.

PL 200 Scepticism, Knowledge, and Reality

3 crs.

An introduction to philosophy through an examination of the relationship between the knower and the known, including topics of perception, doubt, belief, the external world and religious knowledge.

PL 210 Human Conduct and Values

3 crs.

An introduction to philosophy through an examination of representative systems of value and moral propriety, including topics of freedom, the nature of moral obligation and moral judgments, and the concepts of good, right, value, and moral worth.

PL 220 Philosophy of Mind and Action

3 crs.

An introduction to philosophy through an examination of various conceptions of man, including topics of mind, persons, action, intention, and will.

PL 230 Social and Political Man

3 crs.

An introduction to philosophy through an examination of man as a social being including topics of political obligation, justice, communication, law, social contract, liberty, sovereignty, and civil disobedience.

PL 240 Rational Thinking

3 crs.

An introduction to philosophy through an examination of questions about rationality, including: What is a rational argument? What are the clearest and most effective methods of thinking? Are reason and emotion opposed? When is a decision rational? Why be rational? Is science rational? Includes an introduction to elementary ideas of logic.

PL 250 Philosophy, Science and the Modern World

3 crs.

An introduction to philosophy through an examination of the attitudes of modern science and their impact on other fields, including such questions as: What distinguishes the spirit of modern science from that of the middle ages? Are science and art two separate cultures? Do science and religion conflict? What are the political implications of scientific attitudes? Does science eliminate values from the world? Was the romantic reaction to science justified? Primarily for science majors.

PL 260 Philosophy and the Meaning of Life

3 crs.

Discussion and interpretation of, and answers to, the questions: What is the meaning of life? Does life have a purpose? Is existence absurd? Readings will include works of philosophers, poets, novelists, and theologians, e.g., Dostoyevsky, Schopenhauer, Nietzsche, Wittgenstein, Camus.

PL 310 Logic

3 crs.

An introduction to formal logic and analysis; study of propositions and syllogisms; introduction to symbolic logic; selected problems in the philosophy of logic and language.

PL 321 Contemporary Moral Philosophy

3 crs.

Prq.: 3 semester hours in philosophy.

A critical study of selected problems, including the logic of moral discourse, description and evaluation, egoism and altruism, obligation and motivation, moral reasoning and moral practices, in view of contemporary formulations and solutions.

*See page 50 for general information regarding course offerings.

PL 323 Philosophy of Religion

3 crs.

Prq.: 3 semester hours in philosophy.

A logical and conceptual analysis of religious discourse with emphasis on the concepts of God, guilt, miracle, evil, and religious experience; combined with an examination of the nature and justification of religious claims and the relation between faith and reason.

PL 324 Theory of Knowledge

3 crs.

Prq.: 3 semester hours in philosophy.

An exploration of problems concerning knowledge in light of contemporary solutions including the analytical clarification of the main epistemic concepts, such as knowledge, belief, certainty, evidence and justification.

PL 381 Ancient and Medieval Philosophy

3 crs.

A study of the major philosophers of these periods, including the Pre-Socratics, Socrates, Plato, Aristotle, Augustine, Anselm, and Aquinas.

PL 382 Rationalism, Empiricism and Kant

3 crs.

A study of the Rationalists, including Descartes, Spinoza, and Leibniz, and the Empiricists, including Hobbes, Locke, Berkeley, and Hume, especially in regard to the nature of ideas, the use of reason, and the scope and limits of knowledge; concluding in an examination of Kant's attempt to resolve the conflicts between these two movements.

PL 385 Nineteenth Century Philosophy

3 crs.

A study of the main movements of this period, including Idealism, Positivism, Dialectical Materialism and the early existentialist revolt, with special emphasis on the works of Hegel, Schopenhauer, Royce, Mill, Marx, Kierkegaard, and Nietzsche.

PL 386 Contemporary Philosophy

3 crs.

A study of the main movements of this period, including Pragmatism, Analytic Philosophy, and Existential Phenomenology, with special emphasis on the work of Whitehead, Dewey, James, Wittgenstein, Russell, Moore, Sartre, Husserl, and Heidegger.

PL 387 American Pragmatism

3 crs.

A study of the major pragmatists in America and their contributions to theory of knowledge, ethics, philosophical psychology, philosophy of religion. Including a study of the work of William James, C. S. Peirce, George Herbert Mead, and John Dewey.

PL 401 Philosophy of Natural Science

3 crs.

Inquiry into the conceptual foundations of natural science, including topics of induction, causation and determinism, natural law, theoretical explanation, and concept formation.

PL 403 Philosophy and the Arts

3 crs.

Inquiry into recurrent philosophical themes in literature and the fine arts, accompanied by an introduction to the fundamental problems of esthetics.

PL 405 Philosophy of Language

3 crs.

Exploration of what language is and how it is related to other activities, through an examination of some of the basic concepts used in thinking about language, e.g., meaning, ambiguity, open-texture, sense and reference, identity, rules. Emphasis on some of the assumptions made about language and the problems to which they give rise, e.g., Can there be a private language? Is art a language?

PL 410 Existentialism

3 crs.

A critical study of the concepts of human existence, anxiety, freedom, decision; introduction to phenomenology; readings from Kierkegaard, Heidegger, Jaspers, Sartre, Camus.

PL 450 Philosophy Seminar

3 crs.

Prq.: Consent of Instructor

Study of a particular philosopher and/or selected philosophical problems. Topics vary; course may be repeated.

PL 499 Directed Study in Philosophy

1-3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

PL 502 Research

credit to be arranged.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

PL 503 Directed Study

credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

RELIGIOUS STUDIES

RE 100 Introduction to Religious Studies

3 crs.

Definition of "religion" in terms of man's religious belief, experience and expression. The significance of religion in the life and culture of man, including the liberating and restricting forces of religious belief. Emphasis on the contemporary situation with examples from earlier cultures.

RE 201 Comparative Religion: Western

3 crs.

An examination of the origins, development, and basic tenets of the major world religions from earliest times to the Moslem era, with particular emphasis on ancient Near Eastern religions: Judaism, Christianity, and Islam.

RE 202 Comparative Religion: Eastern

3 crs.

An examination of the origins, development and basic tenets of major Eastern religions, including Hinduism, Buddhism, Taoism, Shintoism and Confucianism.

RE 221 Introduction to the Old Testament

3 crs.

Historical and cultural background; literature and interpretation of the Old Testament.

RE 222 Introduction to the New Testament

3 crs.

Historical and cultural background; literature and interpretation of the New Testament.

RE 251 Religion in Contemporary America

3 crs.

A consideration of the organization, practices and beliefs of current American religious organizations set in their historical and cultural perspectives. Roman Catholic, Eastern Orthodox, Jewish and Protestant denominations will be included in the study. The role of the church in the modern American community will be assessed and recent trends within and without the church will be discussed. The study will include such recent theological topics as Honest-to-God, God is Dead, The Theology of Hope, The Secular City and the so-called Jesus movement.

RE 310 Religion and Science

3 crs.

Prq.: One course in either Philosophy or Religious Studies and one year of natural science.

A study of the relationships between Religion and the Sciences. Beginning with historical perspectives, the course will compare methods, language and issues.

RE 315 Topics in Religious Studies

3 crs.

Prq.: Consent of Instructor

A one-semester course in which a special topic in the area of religious studies will be offered.

RE 499 Directed Study in Religious Studies

1-3 crs.

Prq.: Consent of the Department

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to project independently. May be taken twice for a maximum of six credits.

RE 502 Research

credit to be arranged.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

RE 503 Directed Study

credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

Division of Natural Sciences & Mathematics

Biological Sciences,
Chemical Sciences,
Earth Sciences & Geography,
Mathematics &
Computer Science, Physics

Divisional Director: Professor Frank Hilferty

The departments of the Division offer a variety of undergraduate courses which may be selected as free electives or taken to fulfill general education requirements. These courses are designed to give all undergraduates the opportunity to better understand themselves and their environment, as well as to develop the ability to explore the scientific and mathematical dimensions of human life. In addition to the regular departmental majors and minors leading to the degrees of Bachelor of Arts and Bachelor of Science, there are pre-dental, pre-medical, and oceanographic programs, and an interdisciplinary minor in urban affairs. Students working closely with their academic advisor may plan a program which emphasizes preparation for graduate study in their chosen field or a program which is oriented toward immediate entry into the job market.

Through their respective graduate faculties, the departments of the Division offer programs leading to the Master of Arts (Biology and Chemistry) and Master of Arts in Teaching (Biology, Chemistry, Earth Sciences, Geography, Mathematics, Physical Sciences, and Physics). Specific information on these programs may be found under the departments of the Division, and in the section of this catalogue entitled The Graduate School.

DIVISIONAL COURSE OFFERINGS

NS 300 Science and the Impact of Technology

3 crs.

A study of the interplay of science and technology, the environmental, social, and economic consequences of technology, the effect of technical change on society, the management and control of technology, and the nature of the technological decision-making process. Does not satisfy GER.

NS 400 Senior Interdisciplinary Seminar in Environmental Science

3 crs.

Prq.: An introductory course in environmental science or permission of Instructors.

Current environmental issues will be discussed and analyzed in detail from an interdisciplinary viewpoint. The importance of thorough analysis and planning in developing long term solutions to environmental problems will be emphasized. Faculty with appropriate interdisciplinary backgrounds will participate.

Department of Biological Sciences

Professor Kenneth Howe, Chairperson

Commonwealth Professor and Dean of the Graduate School Frank Hilferty

Professors: James Brennan, Elizabeth Cirino, Walter Hewitson, Lawrence Mish,

Walter Morin, William Wall

Associate Professors: John Jahoda, Florian Muckenthaler, Harold Schaefer

The Department of Biological Sciences offers both undergraduate and graduate programs. At the undergraduate level are two programs which lead to the degree of Bachelor of Arts or Bachelor of Science. Also available is a minor in biology designed to integrate with majors in other disciplines.

Graduate study is offered in programs leading to the degree of Master of Arts or Master of Arts in Teaching. Detailed information concerning these programs appears in the appropriate sections below.

UNDERGRADUATE PROGRAMS

Bachelor of Arts/Bachelor of Science

Two programs are offered leading to the degree of Bachelor of Arts or Bachelor of Science: Plan I — Broad-Based Biology Program, and Plan II — Career/Discipline Oriented Program. Both are designed to prepare students for future graduate work or careers in research, teaching, medicine, veterinary science, a number of allied health fields, marine biology and oceanography, environmental sciences, floral and horticultural sciences, conservation, biological supply, park service, wildlife management, pest control, and a wide variety of other fields.

Plan I — Broad-Based Biology Program

Especially suited for persons going into graduate work and careers in teaching, research, or other endeavors, this program forms a comprehensive foundation in biology. Students majoring in the biological sciences under Plan I must satisfactorily complete the following:

BI 103-104 (or equivalent)*, BI 281, BI 282, BI 283, BI 292 (or BI 294), BI 381, BI 393, BI 395, BI 397, BI 401, BI 404 and BI 411.

CH 131-132, MA 103-104, PH 181-182, ES 413.

The chemistry and mathematics courses should be taken in the freshman year. Students with appropriate backgrounds and the concurrence of the Departmental advisor may enroll in more advanced courses in chemistry, mathematics and physics than those indicated above.

Biology majors under Plan I must also successfully complete work in one foreign language through the intermediate level. Those considering graduate work are strongly advised to select German.

Plan II — Career/Discipline Oriented Program

This program constitutes a sound training for those planning for careers as professional biologists immediately following graduation as well as for those who are going on to advanced studies. It is especially appropriate for persons interested in a wide variety of fields associated with technical work and/or research in medicine, health, environmental studies, marine investigations, and the like, where specific technical training or specialization is indicated. Students with a major in the biological sciences under Plan II must satisfactorily complete the following:

BI 103-104 (or equivalent)*, BI 281 (or BI 282), BI 292 (or BI 294), BI 381, BI 393, BI 395, BI 397, BI 411, and a minimum of four additional biology courses selected in consultation with a departmental faculty advisor.

CH 131-132 (or CH 141-142), CH 343-344, MA 101-102
(or MA 103-104), PH 181-182 (or PH 243-244).

The inorganic chemistry and mathematics courses should be taken in the freshman year. Students with appropriate backgrounds and the concurrence of the Departmental advisor may enroll in more advanced courses in chemistry, mathematics, and physics than those indicated above.

Under Plan II language requirements will be decided in consultation with the faculty advisor. As in Plan I, German is recommended for students planning future graduate work.

The Department of Biological Sciences recommends that elective courses be selected to complete one of the following: a minor in a discipline other than biology, participation in one of the Interdisciplinary Programs (see Catalogue section entitled Interdisciplinary Programs), or a customized program of selected courses. It is now possible for students to elect additional courses in biology beyond the departmental requirements.

All programs should be planned in consultation with the faculty advisor.

Each student with a major in biology has an academic advisor from the faculty of the Department of Biological Sciences and may also consult with the Departmental Chairman.

SPECIAL NOTICE: STUDENTS WHO HAVE THE SLIGHTEST INCLINATION TOWARD MAJORING IN THE BIOLOGICAL SCIENCES, EVEN THOUGH INITIALLY IN AN UNDECLARED-MAJOR, SHOULD CONTACT THE CHAIRPERSON OF THE DEPARTMENT OF BIOLOGICAL SCIENCES AS SOON AS POSSIBLE. Many of the courses in the major are sequential, hence certain courses must be taken early in the college career to insure completion of the major within the normal four-year period or to avoid the necessity of taking summer courses.

Minor in the Biological Sciences

The minor is provided for students in fields related to biology or for those interested in a better understanding of the life sciences. It is designed so that it may be fitted to the needs and objectives of each student. Persons interested in a minor in the

*A one-year laboratory course in General Biology, such as BI 101-102, or 107-108, may be considered equivalent.

Department of Biological Sciences should consult with the Chairman of the Department to prepare appropriate records.† Students must satisfactorily complete the following:

A one-year course (6 semester hours) in General Biology, which may be satisfied by BI 101-102, BI 103-104, (BI 105-106) or BI 107-108.

A minimum of 12 semester hours of additional courses in biology, planned in consultation with the Chairman of the Department of Biological Sciences. Any undergraduate course offered in the Department may be considered in planning this requirement, providing appropriate course prerequisites have been earned.

PRE-MEDICAL, PRE-DENTAL, AND OCEANOGRAPHIC PROGRAMS

The Department participates in the Interdisciplinary Programs for students preparing for careers in medicine, dentistry, or oceanography. (See the catalogue section entitled Interdisciplinary Programs.) Participation in an Interdisciplinary Program may be accomplished under either Plan I or Plan II of the biology major.

MARINE SCIENCES CONSORTIUM

The Department also takes part in the Marine Sciences Consortium conducted at the Massachusetts Maritime Academy, which makes it possible for students to augment their degree programs with a wide variety of marine sciences.

Advanced Placement

Entering students who have unusually broad backgrounds in biology will usually be permitted to enroll in courses beyond the 100 series if they meet the Departmental requirements for advanced placement. Persons enrolled in biology programs who feel they may be eligible for advanced placement, or who have earned advanced placement in other ways, should consult with the Chairman of the Department of Biological Sciences.

GRADUATE PROGRAMS‡

Master of Arts

The Department of Biological Sciences offers a program leading to the degree of Master of Arts in Biology, which is designed to prepare qualified students for research, further graduate study and teaching. An undergraduate major in biology, or its equivalent, is normally required for admission to this program, including satisfactory completion of at least one semester of general botany and one semester of general zoology (or at least two semesters of general biology), as well as at least two semesters of college mathematics, organic chemistry, and general physics.

In addition to meeting the general degree requirements, the student must complete a minimum of thirty semester hours credit in the biological sciences. Courses appro-

†The Chairman of the Department of Biological Sciences acts as an academic advisor for students taking a minor in the Department, and they should consult him on a regular basis.

‡ALL APPLICANTS FOR GRADUATE WORK (M.A. and M.A.T. degrees) in the Department of Biological Sciences must have an interview with the Chairman of the Department. Applicants for the M.A. degree will also be required to have interviews with faculty who may later direct research and/or thesis preparation. These interviews will be established by the Chairman during his meeting with the applicant. All interviews must be completed prior to the appropriate deadline for submission of completed applications as set by the college calendar.

Graduate students in both the M.A. and M.A.T. degree programs will have faculty advisors and graduate faculty committees. All courses taken by the graduate student must be approved by his or her advisor.

priate to his or her degree program will be determined in consultation with the departmental faculty advisor. Each student will be expected to participate in original research (up to ten of the thirty credits) under the direction of a faculty member expert in the field of study concerned and to prepare a thesis based upon the research. Research opportunities are available in:

| | | |
|------------------|----------------------|-----------------------|
| Field Biology | Plant Taxonomy | Animal Physiology |
| Plant Anatomy | Ecology | Radiation Biology |
| Cytology | Marine Biology | Neurophysiology |
| Plant Physiology | Invertebrate Zoology | Developmental Biology |
| Microbiology | Mycology | Evolution |
| Genetics | Entomology | |

A reading knowledge of one foreign language is required for this degree.

The departmental offerings listed below include the following courses which may **not** be used in fulfilling the Master of Arts degree requirements: any course numbered in the 100 level, BI 212, 296, 361, 392, 401, and 499.

Master of Arts in Teaching

The Department of Biological Sciences offers a program leading to the degree of Master of Arts in Teaching with a concentration in biology, which is designed primarily for in-service teachers and future teachers, and to provide a foundation for further graduate work. Students enrolled in this program must meet the general requirements for the degree (including 12 hours of course work in areas of professional study — consult the Graduate School section of this catalogue), plus the departmental requirements (a minimum of 18 semester hours of courses in the biological sciences, selected as appropriate to the interests and background of the student, and approved by the student's advisor). Graduate students enrolled in the M.A.T. program are required to have, or acquire outside of the degree program, a background of at least two semesters each of college level chemistry, mathematics, and physics.

Ordinarily, a Preliminary Examination similar to that conducted in the M.A. degree program will be given to M.A.T. candidates after the completion of twelve credits (including transfer credits) of approved graduate work in biology.

The departmental offerings listed below include the following courses which may **not** be used in fulfilling the Master of Arts in Teaching degree program requirements: any course in the 100 level, BI 212, BI 296, BI 361, BI 392, BI 401, and BI 499.

COURSE OFFERINGS*

BI 101 Introduction to the Biological Sciences I

3 crs.

The botanical aspects of biology with emphasis on the structure and function of cells, tissues, organs, and the plant body together with a general survey of the plant kingdom. Such topics as photosynthesis, water relations, respiration, growth, reproduction, heredity, disease, and evolution are included. BI 101, 102 are coordinated so that various concepts common to plants and animals are taught in one semester or the other and not duplicated. Students are expected to complete both courses. Two lectures and one two-hour laboratory period weekly.

BI 102 Introduction to the Biological Sciences II

3 crs.

The zoological aspects of biology with emphasis on such topics as: the nature of sciences and scientific thinking; the structure and physiology of cells, tissues, organs, and organ-systems; embryogeny; heredity; ecological and phylogenetic interrelationships; and a general survey of the animal kingdom. BI 101, 102 constitute a coordinated course in general biology, and students are expected to complete both courses. BI 102 may be taken before BI 101. Two lectures and one two-hour laboratory period weekly.

BI 103-104 Principles of General Biology

3 crs. per semester

Prq.: BI 103 is prerequisite for BI 104.

A detailed study of biological processes and principles at the cellular and organismal levels including such topics as the chemical basis of life, structure and function of plants and animals, development, ecology, and evolution. Primarily for science majors. Two lectures and one two-hour laboratory period weekly.

BI 105 An Appreciation of Modern Biology I

3 crs.

The major concepts of biology and the fundamental principles which underlie the phenomena of life. Consideration is given to plant and animal structure and function, survival, heredity, reproduction, adaptation, and utilization of environmental resources. Primarily for non-science majors. Two lectures and one two-hour laboratory weekly.

BI 106 An Appreciation of Modern Biology II

3 crs.

Prq.: BI 105 or consent of the Instructor.

A consideration of the biological role of man in the scheme of nature. Included will be discussions of human anatomy, physiology, heredity, reproduction, and the origin of the human race, man's dependence on his environment, conservation of resources, and the present and future role of the human species in nature. Primarily for non-science majors. Three lectures weekly.

BI 107-108 Concepts of Biology

3 crs. per semester.

Prq.: BI 107 is prerequisite for BI 108.

A concept-oriented study of biology through an investigative approach in the classroom and the laboratory. A questioning attitude and creative thinking about natural phenomena are encouraged and demonstrated through the use of activities involving familiar living organisms. Primarily for Elementary Education and Special Education majors. Two lectures and one two-hour laboratory period weekly.

BI 170 Biology and Human Thought

3 crs.

The science of living organisms in relation to the cultural development of humans. The sources of modern biology, concepts of evolution, and levels of biological organization are included. Primarily for non-science majors. Three lectures weekly.

BI 180 Conservation of Natural Resources

3 crs.

This course stresses the importance of conservation of natural resources, especially water, and the role of plants and animals in the maintenance and replenishment of our natural heritage. Lectures, guest speakers, readings, and field trips to good and bad examples of conservation practice will form an important segment of the course. The course is designed as an exposition of the conservation problems of Southeastern Massachusetts and will be aimed at teachers of junior and senior high school biology and general science, city and town officials concerned with water, sewage, forestry, conservation, and industrial development and planning. One lecture weekly during the first quarter and one three-hour laboratory period weekly during the second quarter of the spring semester.

*See page 50 for general information regarding course offerings.

BI 195 Growing Plants for the Home, Garden, and Small Greenhouse**3 crs.**

Fundamental principles, techniques and practical aspects of the production, culture, and utilization of plants for the home, flower* and vegetable garden, landscaping, and the small greenhouse. Topics will include plant reproduction, breeding, propagation methods; culture media and techniques; influences of such factors as light, temperature, gases, nutrition, etc., on the growth of plants; disease and insect pests. Designed for the home gardener, teacher or other professionals who grow plants in connection with their work. Two lectures and one two-hour laboratory period weekly.

BI 212 The Biological Environment**3 crs.**

Emphasis is placed on current and future problems associated with man in his environment. The biological relationship between man and other living forms is discussed in terms of man's historical and present role in nature. Topics to be covered include: various aspects of pollution, population, and environmental disturbances. This course is not open to biology majors. Three lectures weekly.

BI 227 Introduction to Animal Behavior**3 crs.**

Prq.: One semester of General Zoology (or equivalent) or consent of the Instructor.

An introduction to the study of animal behavior, primarily from the ethological view but including contributions from other disciplines to achieve a synthesis of theory regarding the behavior of animals. Topics to be covered include social behavior, display and ritualized behavior, aggression, appetitive and consummatory behavior, fixed action patterns, homing and migration, circadian and other rhythms, learned and innate elements of behavior and animal communications. Two lectures and one two-hour laboratory period weekly.

BI 281 Invertebrate Zoology**3 crs.**

Prq.: BI 101-102 (or equivalent) or consent of the Instructor.

The biology of invertebrates from a phylogenetic standpoint with emphasis on taxonomy, morphology, history, physiology, development, and natural history. Representatives of the principal classes of each phylum are studied. Two lectures and one two-hour laboratory period weekly.

BI 282 Comparative Chordate Anatomy**3 crs.**

Prq.: One semester of General Zoology (or equivalent) or consent of the Instructor.

An ontogenetic and phylogenetic survey is made of chordate gross anatomy, supplemented by laboratory dissections of representative species. Emphasis is placed on ecomorphology and the changes in chordate structure and biology that comprise their evolution, with an analysis of the significance of these changes in light of our modern knowledge of evolution. Two lectures and one two-hour laboratory period weekly.

BI 283 Field Natural History**3 crs.**

Prq.: BI 101-102 (or equivalent) or consent of the Instructor.

The identification of local plants and animals with emphasis on the natural history of common animals, dominant biotic communities of Southeastern Massachusetts, general morphology and taxonomy of organisms, and techniques of collecting and preserving. Two lectures and one two-hour laboratory period weekly.

BI 292 Plant Anatomy**3 crs.**

Prq.: BI 101-102 (or equivalent) or consent of the Instructor.

A comparative study of the structural, functional, developmental and phylogenetic characteristics of cells, tissues, and organs in the vascular plants with emphasis on the angiosperms. Two lectures and one two-hour laboratory period weekly.

BI 294 Plant Morphology**3 crs.**

Prq.: BI 101-102 (or equivalent) or consent of the Instructor.

A survey of the plant kingdom from the Monera through the Angiosperms with emphasis on evolutionary adaptations associated with each group and phylogenetic relationships between the divisions as reflected in present day classification systems. Two lectures and one two-hour laboratory period weekly.

BI 295 Plant Propagation**3 crs.**

A course designed to introduce the principles and practices of propagating plants. Techniques of cutting, grafting, budding, layering and propagation by seed will be emphasized. Three lectures weekly.

BI 296 Landscaping

3 crs.

A course designed to introduce the principles behind formal, informal and natural landscaping practices. Emphasis will be on design, selection and maintenance of appropriate plants for given situations — size, form, lines, color, texture, repetition, balance, emphasis, scale, as they relate to improving aesthetic and functional qualities of the environment. Three lectures weekly.

BI 300 Biochemistry

3 crs.

Prq.: BI 101-102 (or equivalent), CH 131-132, MA 103-104 or consent of the Instructor.

A study is made of the functions, chemical transformations, and attendant energy changes associated with basic biological phenomena. Three lectures weekly.

BI 312 Heredity and Human Endeavor

3 crs.

Prq.: One semester of any General Biology course (or equivalent) or consent of the Instructor.

The principles of genetics which are important to an understanding of the hereditary mechanism in man. Individual differences in relation to gene-environment interaction and the role of heredity in education, governance, and society. Primarily an elective for non-science majors. Three lectures weekly.

BI 313 Techniques of Interpretation for the Naturalist

3 crs.

Prq.: At least Junior standing, or consent of the Instructor.

Techniques of presentation of information concerning our natural heritage through public parks and preserves. The prudent use of public park land as camp grounds, recreation areas, natural study sites, and interpretive facilities will be discussed. Meaningful participation in planning and presentation of campfire talks, guided walks, and interpretative displays are an important feature of the course. The techniques utilized are appropriate to students preparing for careers involving interpretation of scientific phenomena in parks, forests, or museums. Also useful to students majoring in educational, historical, anthropological, or archeological curricula. One lecture and one three-hour lecture demonstration weekly.

BI 331 Histology

3 crs.

Prq.: BI 101, 102 (or equivalent) BI 282, CH 131-132, or consent of the Instructor.

A study of the microscopic anatomy of mammalian tissues and organs with emphasis on human material. The study of prepared slides in the laboratory will serve as a basis for discussion of the interdependence of structure and function in the animal body. Two lectures and one two-hour laboratory period weekly.

BI 332 Microscopical Technique

3 crs.

Prq.: BI 101-102 (or equivalent), CH 131-132, or consent of the Instructor.

A study of the use of the light microscope in studying biological materials. The course includes consideration of different uses of the light microscope and preparation of cells and tissues for study with the light microscope. Preparation of whole mounts, sections, and introduction to histochemistry will be included in the laboratory. One lecture and two two-hour laboratory periods weekly.

BI 334 Ornithology

3 crs.

Prq.: BI 101-102 (or equivalent) or consent of the Instructor.

Basic structure, life history, migration, and identification of local birds. Two lectures and one two-hour laboratory period weekly. Early morning field trips.

BI 361 Trees and Shrubs

3 crs.

Prq.: BI 101-102 (or equivalent) or consent of the Instructor.

The identification and classification of woody plants native and introduced to the local area. A course designed for non-science majors and especially for students of professional education. Students will be exposed to lectures, demonstrations of proper collecting and preserving techniques and some short, local field trips. Three one-hour periods weekly.

BI 375 Fundamentals of Microbiology

3 crs.

Prq.: One laboratory course in biology or consent of the Instructor.

An introduction to microorganisms for the non-biology major. Emphasis will be placed on the microorganisms and microbiological techniques as they relate to man, his health, and his environment. Two lectures and one two-hour laboratory period weekly.

BI 381 General and Comparative Physiology **3 crs.**

Prq.: BI 101-102 (or equivalent); CH 131-132, PH 181-182 or consent of the Instructor.

Physiological principles concerned in irritability, contraction, circulation, gas exchange, excretion, and hormonal regulation. Two lectures and one two-hour laboratory period weekly.

BI 382 Vertebrate Zoology **3 crs.**

Prq.: An introductory course in Zoology, or consent of the Instructor. A taxonomic and evolutionary analysis of the functional morphology, systematics, behavior and evolution of the major vertebrate classes. Principal emphasis on taxonomy, systematics, and concepts of zoogeography.

BI 385 Mammalian Physiology **3 crs.**

Prq.: BI 102 or consent of the Instructor.

General physiological principles and their application to the human body. Two lectures and one two-hour laboratory period weekly.

BI 392 Problems in Biology **credit to be arranged.**

Prq.: Consent of the Departmental Chairman.

Individual instruction for advanced students usually involving original research in the biological sciences. Hours to be arranged.

BI 393 Genetics **3 crs.**

Prq.: BI 101-102 (or equivalent); MA 103-104; or consent of the Instructor.

Analysis of the basic principles underlying heredity and the mechanisms involved in the replication, recombination, mutation, variation and expression of genetic material in representative plant, animal and microbial systems. Two lectures and one two-hour laboratory period weekly.

BI 395 Microbiology **3 crs.**

Prq.: BI 101-102 (or equivalent); CH 131-132; or consent of the Instructor.

An introduction to the structure, function, and ecology of microorganisms with emphasis on bacteria and viruses. Two lectures and one two-hour laboratory period weekly.

BI 397 Plant Physiology **3 crs.**

Prq.: BI 101-102 (or equivalent); CH 131-132; or consent of the Instructor.

The growth and function of plants including cellular physiology, water relations, metabolism, respiration, photosynthesis, nutrition, growth-regulation, and the influence of environment. Two lectures and one two-hour laboratory period weekly.

BI 401 Seminar in Biology **1 cr.**

Prq.: Consent of the Instructor.

In-depth consideration of current problems and research in the biological sciences. One period weekly for the first, second and fourth quarters.

BI 404 Biological Evolution **2 crs.**

Prq.: BI 393 or consent of the Instructor.

The theory of evolution and the operation of evolutionary forces as related to modern taxonomy, with emphasis on such topics as mutation, variation, hybridization, polyploidy, isolation, natural selection, and population genetics. Intensive course: four lectures weekly for one quarter.

BI 410 Marine Biology **3 crs.**

Prq.: BI 281, BI 283, BI 393, BI 397; or consent of the Instructor.

An introduction to the marine ecosystems with emphasis on factors involved in the growth, diversity, and distribution of populations occupying the marine habitats of the Eastern Atlantic coast. Two lectures and one two-hour laboratory period weekly.

BI 411 Ecology **3 crs.**

Prq.: BI 281, 283, 292, 393, 397; or consent of the Instructor.

The dynamics and evolution of populations, communities, and eco-systems. Students become acquainted with the communities of Southeastern Massachusetts through field studies. Two lectures and one two-hour laboratory period weekly.

BI 413 Mycology

3 crs.

Prq.: BI 101-102 (or equivalent), CH 131-132, or consent of the Instructor.

An introduction to the morphology, taxonomy, and physiology of the fungi. Two lectures and one two-hour laboratory period weekly.

BI 420 Developmental Biology

3 crs.

Prq.: Any one-year sequence General Biology course; CH 131-132; or consent of the Instructor.

A study of developmental processes at different levels of organization with emphasis on animal development. Topics include gametogenesis, fertilization, yearly embryonic development, organogenesis, differentiation, growth and regeneration. Two lectures and one two-hour laboratory period weekly.

BI 427 Cytology

3 crs.

Prq.: Any one-year sequence General Biology course, or consent of the Instructor.

Cellular morphology and organization including descriptions of major intracellular processes and the functional significance of cellular structures. Two lectures and one two-hour laboratory period weekly.

BI 430 Biological Electron Microscopy

3 crs.

Prq.: BI 427 or consent of the Instructor.

An introduction to the techniques of tissue preparation including fixation, dehydration and embedment procedures, followed by sectioning and staining. Practical use of the electron microscope to observe and record images of specimens and photographic darkroom techniques necessary to prepare acceptable electron micrographs. One lecture and one four-hour laboratory period weekly.

BI 431 Techniques and Applications of Electron Microscopy

3 crs.

Prq.: One year course in science at the college level, or consent of the Instructor.

Designed for persons interested in learning the fundamental techniques involved in the use of the electron microscope and interpretation of electron photomicrographs. Basic principles of tissue preparation and applications of electron microscopy will be stressed. One lecture and one three-hour laboratory period weekly.

BI 432 Workshop in Electron Microscopy (BI 430)

3 crs.

Prq.: BI 101-102 (or equivalent), CH 131-132, or consent of the Instructor.

Intensive three week workshop in the techniques of fixation, dehydration, embedding, sectioning and staining tissues, photographing, printing, enlarging, and interpreting electron micrographs. Special techniques of autoradiography, freeze drying, and preparation of protozoans, and bacteria for EM, preparation of formvar coated grids and single slot grids will be demonstrated. One lecture and one three-hour laboratory period daily.

BI 440 Arthropods and Disease

3 crs.

Prq.: BI 101-102 (or equivalent), or consent of the Instructor.

A study of arthropods and arthropod-borne parasites and disease in relation to medical problems occurring throughout the world. This course emphasizes how disease-causing insects and related organisms affect the health of human societies. Primarily an elective for non-science majors. Three lectures weekly.

BI 441 General Entomology

3 crs.

Prq.: BI 101-102 (or equivalent), or consent of the Instructor.

A study of the biology and control of insects with emphasis on the taxonomy of the orders and major families. Formation of an identified insect collection is required. Two lectures and one two-hour laboratory period weekly.

BI 443 Parasitology

3 crs.

Prq.: BI 101-102 (or equivalent), or consent of the Instructor.

The biology of animal parasites and their vectors with emphasis on morphology, physiology, development, taxonomy, and distribution. Representatives of the principal groups of parasites are studied in the laboratory. Two lectures and one two-hour laboratory period weekly.

BI 451 Marine Algae

3 crs.

Prq.: BI 101-102 or BI 103-104, BI 294, or consent of the Instructor.

A study of the distribution, cytology, life cycles, taxonomy and physiology of the major groups of marine algae. Two lectures and one two-hour laboratory period weekly.

BI 471 Plants and Man

3 crs.

Prq.: BI 101-102 (or equivalent) or permission of Instructor.

A study of the value of plants to mankind; special emphasis given to plants used as food, fiber, lumber, fuel, clothing, medicine, poison, beverages, dyes and condiments. Field trips and demonstrations will be offered.

BI 481 Sensory Physiology

3 crs.

Prq.: BI 101-102 (or equivalent) or consent of the Instructor.

Discussion on the structure and function of human sensory receptors: vision, hearing, touch, smell, taste; muscle receptors and autonomic system receptors. One 2½ hour lecture weekly.

BI 485 Seminar on Human Sexual Reproduction

3 crs.

Prq.: One semester of General Zoology (or equivalent) or consent of the Instructor.

Sperm and egg production; fertilization; embryology of foetus; development and physiology of the foetus; hormones in reproduction (sexual cycles, pregnancy and lactation); sexual behavior and artificial controls of reproduction. One 2½ hour lecture weekly.

BI 499 Directed Study in Biology

1-3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

BI 502 Research

credit to be arranged.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

BI 503 Directed Study

credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

BI 506 Experimental Morphology of Angiosperms

3 crs.

Prq.: BI 292, BI 393, BI 397; or consent of the Instructor.

The growth and development of flowering plants as revealed by experimental modification of their environment, including an investigation of the basic molecular processes involved in genetic control of plant development and their interaction with hormonal mechanisms and environmental influences. Two lectures and one two-hour laboratory period weekly.

BI 507 Comparative Morphology of the Vascular Plants

3 crs.

Prq.: BI 292, BI 397, BI 404, BI 427; or consent of the Instructor.

The vascular plants from the psilopsids to the angiosperms using classical and contemporary data for the evaluation of phylogenetic and phenetic relationships. Two lectures and one two-hour laboratory period weekly.

BI 508 Taxonomy of Spermatophytes

3 crs.

Prq.: BI 283, BI 294; or consent of the Instructor.

A survey of the seed plants; their structure, taxonomy, phylogeny, and ecological importance. Two lectures and one two-hour laboratory period weekly.

BI 520 Developmental Genetics

3 crs.

Prq.: BI 101-102, BI 393; CH 131-132; or consent of the Instructor.

An examination of current knowledge of the genetic basis of developmental processes. Mechanisms of expression of genetic information during the early stages of development will be discussed. Differential gene function as the basis of differentiation will be considered along with genetic control mechanisms, genetic interaction at different levels and regulation of gene function. Three lectures weekly.

BI 523 Neurophysiology I

3 crs.

Prq.: BI 381 or consent of the Instructor.

The physiology of the peripheral nervous systems, receptors, and muscles, considered in both vertebrates and invertebrates. Two lectures and one two-hour laboratory period weekly.

BI 524 Neurophysiology II

3 crs.

Prq.: BI 381 or consent of the Instructor. BI 523 need not precede BI 524.

The central nervous system of invertebrates and vertebrates including anatomical, physiological, and biochemical aspects. When appropriate, some behavioral studies will be considered. Two lectures and one two-hour laboratory period weekly.

BI 525 Mammalogy

3 crs.

Prq.: BI 282 or consent of the Instructor.

The classification, distribution, life histories, techniques of collection and preservation, ecology, and ethology of mammals. Two lectures and one two-hour laboratory period weekly.

BI 526 Microbial Physiology

3 crs.

Prq.: BI 300, BI 395; CH 344; or consent of the Instructor.

An advanced study of bacteria and fungi emphasizing their nutrition, growth, death, and chemical activities. Laboratory work will demonstrate some research methods of microbial physiology and illustrate some representative physiological systems. Two lectures and one two-hour laboratory period weekly.

BI 527 Comparative Ethology

3 crs.

Prq.: BI 282, BI 381 (or BI 385); consent of the Instructor.

Behavioral adaptations of animals to their environments and way of life. Introduction of the objective analysis of behavior patterns and use of patterns in clarifying evolutionary relationships. Two lectures and one two-hour laboratory period weekly.

BI 530 Advanced Entomology

3 crs.

Prq.: BI 440 or consent of the Instructor.

The biology of insects including the immature stages. Topics include: morphology, physiology, development, taxonomy and ecology. Two lectures and one two-hour laboratory period weekly.

BI 536 Ichthyology

3 crs.

Prq.: BI 282 or consent of the Instructor.

Classification, distribution, economic value, identification, life histories, management, morphology, ethology, ecology and preservation of fishes. Two lectures and one two-hour laboratory period weekly.

Department of Chemical Sciences*

Professor Wilmon Chipman, Chairperson

Professors: Henry Daley, Jr., Vahe Marganian

Associate Professor: Margaret Souza

Assistant Professors: Joseph Pagano, Ira Smiley

The Department of Chemical Sciences offers programs leading to the degrees of Bachelor of Arts in Chemistry, Bachelor of Science in Chemistry, Master of Arts in Chemistry and Master of Arts in Teaching Chemistry. All of these programs are designed to provide the skills and knowledge necessary to prepare students for successful careers in the chemical industry, chemical research, teaching, oceanography and environmental science, or for further study in graduate degree programs.

UNDERGRADUATE PROGRAMS

Bachelor of Arts/Bachelor of Science

The department offers two major programs in Chemistry and also a Chemistry-Geology major jointly with the Department of Earth Sciences. The first major offered by the department, the major in Professional Chemistry, is designed for students who plan to go on to graduate work in chemistry or to do research in the chemical industry. The courses offered in this program meet the requirements of the American Chemical Society for an approved major. Satisfactory performance in this program (B average) will give the student the professional preparation required for an assistantship or fellowship in graduate school. The second major, the major in Chemistry, is designed for students who wish to prepare for such fields as medicine, dentistry, the chemical industry, secondary school teaching, chemical sales work, pharmacy, oceanography, environmental sciences, sanitation chemistry, or veterinary science. Only a minimum number of chemistry courses are required so that a program suited to an individual's interests may be worked out with the student's faculty advisor. Students interested in medicine or dentistry should consult the section of the catalogue describing the pre-medical and dental programs.

Professional Chemistry Major

CH 100 (or MA 180), 141-142 (or 131-132), 241-242, 343-344, 381-382, 441 or 442, 444, 450; MA 101-102, 201, 316; PH 243-244, 387; LG 191-192 or LR 151-152 or the equivalent. (LF 151-152 may be substituted for LG 191-192 or LR 151-152 with the written permission of the department.)

Chemistry Major

CH 100 (or MA 180), 141-142 (or 131-132), 242, 343-344, 381-382; MA 101-102 (or MA 103-104 with the written permission of the department); PH 243-244 (or PH 181-182 with the written permission of the department); a one-year sequence in a foreign language at the intermediate level or the equivalent.

*The Department of Chemical Sciences is on the list of approved schools of the American Chemical Society.

Chemistry Minor

18 credits in chemistry, exclusive of CH 200.

Physical Sciences Minor

18 credits in chemistry and physics, exclusive of CH 200 and PH 200.

Additional Comments on Requirements:

The normal freshman program for a student interested in either chemistry major consists of CH 100 or MA 180, CH 141-142, MA 101-102, and six credits toward the general education requirements. A student need not decide between the two chemistry majors until the second semester of his sophomore year. Students completing the Professional Chemistry major will meet the requirements for certification of the American Chemical Society.

Because of the sequential nature of the courses required of a chemistry major, a student considering majoring in chemistry must take MA 101-102 (or MA 103-104 with the permission of the department of Chemical Sciences) and CH 141-142 in the freshman year or plan to attend summer school. For this reason any student considering the possibility of majoring in chemistry should consult a member of the department before registering for freshman courses.

GRADUATE PROGRAMS

Master of Arts

The Department of Chemical Sciences offers a program leading to the degree of Master of Arts in Chemistry, which is designed to prepare qualified students for research, further graduate study, and teaching. An undergraduate major in chemistry, or its equivalent, is normally required for admission to this program. Applicants must have satisfactorily completed the following courses: one semester of differential calculus, one semester of integral calculus, two semesters of calculus based physics, two semesters of general chemistry with laboratory, one semester of analytical chemistry, two semesters of organic chemistry and two semesters of physical chemistry. Other laboratory courses in chemistry are desirable.

Applicants must have an interview with the Chairman of the Department. Ordinarily, no application will be considered unless this requirement has been met.

In addition to meeting general degree requirements, the student must complete at least 30 graduate credits in chemistry which shall include at least six semester hours of thesis credit (CH 502).

Each graduate student must satisfactorily complete the following core curriculum or present evidence that it has been successfully completed.

CH 444 Advanced Inorganic Chemistry

CH 450 Instrumental Analysis

CH 597 Advanced Physical Chemistry I

CH 598 Advanced Physical Chemistry II

CH 591 Advanced Organic Chemistry I

CH 592 Advanced Organic Chemistry II

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.A. degree requirements:

Any Chemistry course numbered below 400, and CH 499, CH 571-572 Modern Structural Chemistry I-II, CH 581 Structural Organic Chemistry, CH 583 Dynamic

Organic Chemistry, CH 585 Atomic and Molecular Structure, CH 587-588 Modern Chemistry I-II. (The last seven courses were designed specifically for the M.A.T. degree.)

A reading knowledge of German or Russian is required for the degree. All courses must be approved by the advisor.

Master of Arts in Teaching

The Department of Chemical Sciences offers programs leading to the degree of Master of Arts in Teaching with a concentration in chemistry or in physical science. These programs are designed primarily for teachers and future teachers of chemistry or physical science.

In addition to meeting general degree requirements, the student must complete the departmental concentration requirement by electing courses appropriate to his degree program and approved by his advisor.

Additional information regarding the degree may be found in the Graduate School section of this catalogue.

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.A.T. degree requirements: CH 100, CH 131, CH 132, CH 141, CH 142, CH 200, CH 390, and CH 499.

COURSE OFFERINGS*

CH 100 Computer Science in Chemistry

1 cr.

Introduction to computer programming as used in Chemistry. Particular emphasis will be on applications of Fortran for statistical studies in the Chemistry laboratory.

CH 131, 132 General Chemistry with Qualitative Analysis I-II

3 crs for each semester.

The elements and their compounds, with emphasis on structure and its relationship to properties. CH 131 is prerequisite to CH 132. Two lecture periods and one two-hour laboratory period weekly.

CH 141, 142 Inorganic Chemistry with Qualitative Analysis I-II

4 crs. for each semester.

Theoretical inorganic chemistry with emphasis on mass-energy relationships in terms of structure and physical laws. Laboratory work emphasizes quantitative techniques. CH 141 is prerequisite to CH 142. Three lecture periods and one four-hour laboratory period weekly.

CH 200 Survey of Chemistry

3 crs.

The fundamental laws of chemistry are studied together with their application to elements and compounds, reactions and properties. Two lecture periods and one two-hour laboratory period weekly.

CH 202 Chemistry in Everyday Life

3 crs.

A lecture demonstration course on the application of chemistry to selected topics that an individual encounters in his daily life. Sample topics are: a) colloids and their relationship to foods and air pollution; b) acids, bases and pH; the effects of fertilizers; c) drugs; the nature of various chemical classes and their chemical effects on the human body. Three hours lecture. (Because of the demonstrations, class enrollment must be limited to 40 students).

CH 210 Chemistry and Society

3 crs.

A study of the effects that various discoveries in chemistry have had on society in the past and work that is presently underway in chemistry in an attempt to alleviate problems created by past discoveries.

CH 241 Inorganic Quantitative Analysis

3 crs.

Prq.: CH 132 or CH 142.

The classical and modern methods for the volumetric and gravimetric determination of elements and groups. Two lecture periods and one four-hour laboratory period weekly.

CH 242 Intermediate Inorganic Chemistry

3 crs.

Prq.: CH 132 or CH 142.

The descriptive chemistry, as well as synthesis and reactions, of nontransitional elements and their compounds are studied systematically. Correlations of structure and properties are explained on the basis of modern theories.

CH 250 Instrumentation

3 crs.

Prq.: CH 132 or permission of the Instructor.

The physical chemistry basic to modern analytical instrumentation will be discussed as the basis for the study of instrumental analysis. Lecture and laboratory.

CH 252 Recent Developments in Inorganic Chemistry

3 crs.

Prq.: CH 132.

Current topics, such as ligand field theory of coordination complexes, molecular orbital theory, stereochemistry, crystallography, rare-earth elements, nonaqueous solvents, spectroscopy, and kinetics of inorganic reactions will be treated, according to the interests of the students. Offered only through the Division of Continuing Education.

CH 280 Physical Chemistry for the Life Sciences

3 crs.

Prq.: CH 132 or 142.

A study of the laws governing the physical and chemical behavior of compounds of primary interest to students in the Life Science fields. Particular application will be made to the thermodynamics, kinetics and equilibria involved in compounds of biological interest.

*See page 50 for general information regarding course offerings.

CH 290 Environmental Chemistry**3 crs.**

Prq.: CH 132.

A study of the chemical aspects of such environmentally important problems as air and water pollution, solid waste disposal, thermal pollution, wastewater treatment, environmental antagonists, mercury pollution, the internal combustion engine, or other topics of current interest. Laboratory work will be concerned with techniques for detecting, monitoring and controlling environmental phenomena. Emphasis will be placed on the use of analytical techniques in determining ecological parameters. Lecture, laboratory and assigned special projects in the field.

CH 343, 344 Organic Chemistry I-II**4 crs. for each semester.**

Prq.: CH 132 or CH 142 and consent of the Instructor.

A survey of the chemistry of organic compounds organized in terms of structure, mechanism of organic reactions, and synthesis. CH 343 is prerequisite to CH 344. Three lecture periods and one six-hour laboratory period weekly.

CH 372 Marine Chemistry**3 crs.**

Prq.: CH 132 or CH 142

A study of the chemistry of the sea and the chemical exchange between hydrosphere, biosphere, lithosphere and atmosphere. Topics include: composition and properties of seawater, salinity, carbon dioxide system, nutrients and fertility of the ocean, chemical evolutions of the marine sediments and petroleum, chemical products of marine biota, isotope geochemistry, desalination, marine pollution and chemical resources from the ocean.

CH 381, 382 Physical Chemistry I-II**4 crs. for each semester.**

Prq.: CH 132 or CH 142; MA 102.

The laws governing the physical and chemical behavior of compounds. CH 381 is prerequisite to CH 382. Three lecture periods and one four-hour laboratory period weekly.

CH 384 Physical Chemistry II**2 crs.**

Prq.: CH 381.

The alternative to CH 382 for students who elect to student teach during the second semester. Differs from CH 382 by the omission of all material on quantum chemistry. Three lecture periods and one four-hour laboratory period for one quarter.

CH 390 Research Problems in Chemistry**credits to be arranged.**

Prq.: consent of the Department.

Special projects for advanced students desiring individual instruction in the methods of chemical research. Hours arranged.

CH 392 Laboratory Techniques**3 crs.**

Special techniques used in the research laboratory, such as glass-blowing, vacuum line technique, vacuum distillation, dry-box operations and advanced synthetic techniques. Hours arranged.

CH 440 Advanced Organic Chemistry**3 crs.**

Prq.: CH 344, and consent of the Instructor.

Selected topics in advanced organic chemistry, such as physical organic chemistry, alicyclic and heterocyclic chemistry, natural products, and advanced synthetic methods. Hours arranged.

CH 441, 442 Qualitative Organic Analysis I-II**3 crs. for each semester.**

Prq.: CH 344.

The reactions of organic compounds with emphasis on those of importance for classification and identification. Laboratory work involves the identification of both simple compounds and mixtures. One lecture period and one six-hour laboratory period weekly.

CH 444 Advanced Inorganic Chemistry**3 crs.**

Prq.: CH 382.

The topics of group theory, stereochemistry, ligand field theory, molecular orbital theory, synthesis and kinetics of reactions as applied to transition metal elements will be treated in detail. CH 382 may be taken concurrently. Hours arranged.

CH 450 Instrumental Analysis

3 crs.

Prq.: CH 382.

Theory and practical application of instrumental methods as applied to chemical analysis; including pH measurements, electro-deposition, potentiometry, crystallography, mass spectrometry and spectroscopy. CH 382 may be taken concurrently. Two lecture periods and one four-hour laboratory period weekly.

CH 461, 462 General Biochemistry I-II

3 crs. for each semester.

Prq.: CH 344 and consent of the Instructor.

A survey of the chemical components of living matter and the major processes of cellular metabolism. Two lecture periods and one four-hour laboratory period weekly.

CH 498 Internship in Chemical Sciences

3-15 crs.

Prq.: Consent of Department.

Laboratory experience in industrial or government laboratories, regulating agencies or academic laboratories at other institutions.

CH 499 Directed Study in Chemistry

1-3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

CH 502 Research

credit to be arranged.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

CH 503 Directed Study

credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

CH 522 Chemical Aspects of Nutrition

3 crs.

Prq.: CH 132, BI 381 or BI 385 or permission of the Instructor.

Topics include: structure of the chemical nutrients, energy requirements and how cells convert food into energy, the role of and requirements for vitamins and minerals.

CH 571-572 Modern Structural Chemistry I-II

3 crs. for each semester.

Prq.: Permission of the Instructor.

The structural approach, based on the concept of electron pairing in molecular orbitals, will be applied to inorganic and, to a lesser extent, organic chemistry. Topics to be covered will include: electronic structure and chemical bonding, spectroscopy, acid-base chemistry, stereochemistry, equilibrium, elementary thermodynamics, electrochemistry and modern nuclear chemistry.

CH 581 Structural Organic Chemistry

3 crs.

Prq.: CH 132 or 142 or 572 or 585 or 588.

Organic chemistry from a structural viewpoint. Topics to be studied will include the following: elementary molecular orbital theory, the structure and charge distribution of functional groups, structure proof by physical and chemical methods, infra-red, ultra-violet and nuclear magnetic resonance spectroscopy, mass spectrometry, stereochemistry, resonance, inductive effects, and steric effects. Practical experience with IR, UV, NMR, and mass spectra, and the determination of the structure of an organic molecule will be a part of the laboratory.

CH 582 Biochemistry

3 crs.

Prq.: BI 300 or CH 452 or permission of Instructor.

An in depth examination of one area in biochemistry. Included will be a discussion of: laboratory techniques used in separation and purification, chemical structures and the interactions and functions of the biomolecules appropriate to the area of study. A critique of original literature will also be included.

CH 583 Dynamic Organic Chemistry**3 crs.**

Prq.: CH 132 or 142 or 572 or 585 or 588.

Modern organic chemistry from a mechanistic viewpoint. Topics to be studied will include the following: The kinetics of organic reactions, determination of the mechanisms of organic reactions, addition reactions, elimination reactions, substitution reactions, molecular arrangements, the reaction of carbonium ions, carbanions and free radicals, photochemistry and the conservation of orbital symmetry.

CH 584 Survey of Biochemical Reactions**3 crs.**

Prq.: CH 462 or permission of the Instructor.

Biochemical reactions from a mechanistic viewpoint. Emphasis will be placed on the study of the mechanism of reactions that are important in biochemical systems. Topics to be studied will include: the role of inorganic ions in biochemistry, mechanism of enzyme action, oxidative phosphorylation and electron transport, biogenetic schemes, and the transfer of genetic information.

CH 585 Atomic and Molecular Structure**3 crs.**

Prq.: Permission of the Instructor.

A modern approach to atomic and molecular structure will be developed and applied to selected cases from inorganic chemistry. Topics to be covered will include the following: atomic structure, the molecular orbital approach to molecular structure, antibonding orbitals, introductory ligand field theory, geometrical and optical isomerism, conformational analysis, correlation of structure and reactivity, and the conservation of orbital symmetry.

CH 586 Biochemistry of the Hormones**3 crs.**

Prq.: BI 300 or CH 462 or permission of Instructor.

An examination of the endocrine system from the biochemical perspective. Particular emphasis will be placed on chemical structure as it relates to the function of the hormones. A critique of original literature will also be included.

CH 587-588 Modern Chemistry I, II**3 crs. each semester.**

Prq.: Permission of the Instructor.

An introduction to recent developments in chemistry. Topics to be covered will be chosen from the following areas: atomic structure, bonding, spectroscopy, acid-base chemistry, stereochemistry, kinetics, equilibrium, elementary thermodynamics, electrochemistry and nuclear chemistry. Environmental aspects of topics will be developed and the laboratory will be concerned with analysis for environmentally important parameters.

CH 591 Advanced Organic Chemistry I, Structure**3 crs.**

Prq.: CH 344.

Instrumental techniques of organic structure determination such as infra-red, ultraviolet and proton magnetic resonance spectroscopy and methods of separation and identification. Classic examples of modern structure proofs will be considered in detail. Students will conduct a literature search on the structure of an organic molecule and present a short seminar on this structure proof. Practical experience with IR, UV, NMR and gas chromatography of the structure of an unknown organic molecule.

CH 592 Advanced Organic Chemistry II, Mechanism and Synthesis**3 crs.**

Prq.: CH 344 and 591, or permission of the Instructor.

A one-semester course in advanced organic chemistry designed for participants who have some background in elementary organic chemistry. Topics to be considered will include recent developments in the mechanism of organic reactions and organic synthesis. Special topics may include valence tautomerism, biogenetic synthesis, photochemistry, cycloaddition reactions and the Woodward-Hoffman rules for the conservation of orbital symmetry.

CH 597 Advanced Physical Chemistry I,**Chemical Thermodynamics & Statistical Thermodynamics****3 crs.**

Prq.: CH 382.

The zeroeth, first and second laws of thermodynamics, entropy and free energy functions, probability and the thermodynamic functions from a statistical consideration, the partition function.

CH 598 Advanced Physical Chemistry II,**Atomic & Molecular Structure and Kinetics****3 crs.**

Prq.: CH 382.

An introduction to quantum chemistry, rotational and vibrational energy levels, first, second and third order reactions, the Arrhenius Equation and energy of activation, consecutive reactions, collision and transition state theories.

Department of Earth Sciences & Geography

Professor Emanuel Maier, Chairperson

Professors: Robert Boutilier, Ira Furlong, Agrippina Macewicz

Associate Professor: Richard Enright

Assistant Professors: Timothy Barker, Paul Blackford, Robert Dillman,

Marilyn Furlong, Robert Hoekzema, Reed Stewart

Visiting Lecturers in Oceanography from Woods Hole Oceanographic

Institution: Joseph Chase, Peter Ortner

The Department of Earth Sciences and Geography offers an undergraduate major in earth sciences, a major in geography, a track in geology. In addition, programs in chemistry-geology, oceanography, and urban affairs and planning are available. See Interdisciplinary programs elsewhere in this catalogue.

Programs leading to the degree of Master of Arts in Teaching with a concentration in earth sciences or geography are offered by the Department.

Modern equipment enables the department to offer investigation-oriented laboratory experience. This equipment includes: (1) an X-ray Diffractometer with powder cameras; (2) thin section equipment; (3) polarizing and stereoscopic microscopes; (4) atomic absorption spectrophotometer; (5) seismic refraction unit; (6) surveying equipment; (7) a proton precession magnetometer; (8) earth resistivity unit, and (9) Frantz Isodynamic Separator.

In addition, the department has a well equipped cartographic laboratory, a climatological station with solar radiation recording instrumentation, and an astronomy observatory. Finally, this department has access to a scanning electron microscope through the Southeastern Massachusetts Consortium.

UNDERGRADUATE PROGRAMS

Bachelor of Arts/Bachelor of Science

GEOGRAPHY

The geography major is designed to provide the student with an understanding and appreciation of the physical and cultural attributes of the world in which he lives.

Opportunities for graduates include careers as geographers or cartographers in private industry, in many different government agencies, urban and regional planning

offices, in government or private organizations concerned with the environment, and as teachers in secondary schools.

Geography Major

GE 100, GS 110, GE 216, GE 304, GS 362, GE 471, GS 353 or GS 473; Three additional Physical Geography or Earth Science courses; One course from: GE 217, GE 354, GE 363, GE 418; One regional geography course; MA 110 plus one year of mathematics;

Competence in a modern foreign language at the intermediate level, as evidenced by completion of an intermediate level one year course, or an equivalent.

Not more than one "D" for a semester course in the major shall be accepted to fulfill the requirements for this program.

Geography Minor

GE 100, GS 110 plus four additional Geography courses recommended by the department.

EARTH SCIENCES

The major in earth sciences is a broad based program that introduces the student to the various sciences that deal with the physical aspects of the earth and universe. Career opportunities for graduates exist in government service in conservation and park management and environmental studies relating to environmental impact statements as well as in teaching in the secondary schools.

Earth Sciences Major

ES 100, ES 101, ES 284, ES 301 or 302, GE 303, ES 306, ES 372, ES 463, plus a minimum of three additional courses selected with the advisor's approval.

MA 101-102 or MA 103-104, CH 131-132 or CH 141-142, one year of Physics or Biology.

Competence in a modern foreign language at the intermediate level, as evidenced by completion of an intermediate level one year course, or an equivalent.

Not more than one "D" for a semester course in the major shall be accepted to fulfill the requirements for this program.

Earth Sciences Minor

ES 100, ES 101 plus four additional Earth Science courses as recommended by the department.

Geology Track

The track in geology provides students with an understanding of the physical aspects of the earth and the processes which act upon it. Students are prepared for government service, environmental work relating to impact studies and, for work in such fields as engineering, mining or petroleum geology.

ES 100, ES 101, ES 283, ES 284, ES 372, ES 463, ES 475; Four additional courses selected with the advisor's approval;

MA 103-104 or MA 101-102;

CH 131-132 or CH 141-142;

Physics or Biology PH 181-182 or PH 243-244 or BI 101-102. Competence in a modern foreign language at the intermediate level, as evidenced by completion of an intermediate level one year course, or an equivalent.

Not more than one "D" for a semester course in the major shall be accepted to fulfill the requirements for this program.

GRADUATE PROGRAMS

Master of Arts in Teaching

This Department offers a program leading to the degree of Master of Arts in Teaching with a concentration in earth sciences or geography, which is designed primarily for in-service teachers and future teachers, and to provide a foundation for further graduate work. Students enrolled in these programs must meet the general requirements for the degree (including 12 hours of course work in areas of professional study — consult the Graduate School section of this catalogue), plus the departmental requirements (a minimum of 18 semester hours of courses in the above areas, selected as appropriate to the interests and background of the student, and approved by the student's advisor). Graduate students enrolled in the M.A.T. program are required to have, or acquire outside of the degree program, a background of some of the introductory college level courses in natural science and mathematics.

The departmental offerings listed below include the following courses which may not be used in fulfilling the Master of Arts in Teaching degree program requirements: any course in the 100 level, ES 201-202, GS 210, ES 499, GE 499, and GS 261-262.

COURSE OFFERINGS*

GEOGRAPHY AS SOCIAL SCIENCE

GS 110 The Cultural Environment 3 crs.

A study of the distribution of cultural landscapes as interacting with human activities, especially the way in which the spread of people and ideas modify, and are shaped by, the physical world.

GS 115 Map Skills for the Citizen 1 cr.

This course will introduce various types of maps, air photos and related graphics. It aims at developing skills for the use of maps in everyday life and in certain career fields. Map types included are: topographic maps, property maps, maps used by local government, marine charts, maps of recreational areas and road maps. One two hour period per week.

GS 150 Geographic Approach to Social Science 3 crs.

The interpretation of maps, globes and graphs as the basis for inferences about social phenomena and problems. This course has been developed in cooperation with Elementary Education Department and is of special interest for future elementary school social studies teachers. Does not satisfy GER.

GS 210 War/Peace 3 crs.

An introduction to open-ended research and discussion to discover non-lethal resolution of conflicts between groups of human beings in a finite world.

GS 252 Geography of Anglo-America 3 crs.

Prq.: GE 100 or GS 110, or consent of the Instructor.

A description and analysis of the relationships between relevant physical and cultural features of regions in the United States and Canada.

GS 261-262 World Regional Geography I-II 3 crs. for each semester.

Geographical context of current social economic and political problems in Europe, the U.S.S.R., the Orient, the Middle East, the Pacific World, Africa, Latin America and Anglo-America. Geographical features characteristic of each country and their relationship to a functioning political and economic unit. Either semester may be taken independently.

GS 353 Urban Geography 3 crs.

Prq.: Consent of the Instructor.

Geographic aspects of the city including location, function, and land use patterns, and tributary areas.

GS 358 Geography of Latin America 3 crs.

Prq.: GE 100 or consent of the Instructor.

Physical and cultural patterns of selected countries of South America. Emphasis on current economic and political problems.

GS 362 Economic Geography 3 crs.

Prq.: Consent of the Instructor.

Simple models and frameworks of the various ways in which man organizes his economic activity. Problems of spatial structure, arrangements and patterns of economic activity.

GS 450 Geography of Agriculture and Food Production 3 crs.

Prq.: GE 100 or consent of Instructor.

A study of food producing capabilities of different climatic environments, technologies, and management systems throughout the world, via case study approach.

GS 451 Geography of Europe 3 crs.

Prq.: GE 100 or GS 110 or consent of the Instructor.

The character of the natural and cultural environments of the geographic regions of Europe.

*See page 50 for general information regarding course offerings.

GS 452 Geography of Asia

3 crs.

Prq.: GE 100 or GS 110 or consent of the Instructor.

The physical and cultural patterns of selected countries of Asia.

GS 453 Geography of Canada

3 crs.

Prq.: GE 100 or GS 110 or consent of Instructor.

The geography of environment, resources and population are examined in relation to the history, economic, and regional land patterns of Canada.

GS 461 Geography of Africa

3 crs.

Prq.: GE 100 or GS 110 or consent of Instructor.

The physical and cultural features of the African continent with special reference to the emerged political and regional patterns.

GS 473 Political Geography

3 crs.

Prq.: Consent of the Instructor.

Variation of politically organized areas and their relationship to each other. Political behavior from the viewpoint of ethology, i.e., territoriality and aggression.

GS 504 Geography of U.S.S.R.

3 crs.

Prq.: GE 100 and consent of the Instructor.

The geography of environment, resources and population are studied in relation to history and the present economic and social system of the Soviet Union.

EARTH SCIENCES

ES 100 Physical Geology (formerly ES 181)

3 crs.

The constitution of the earth and the processes acting on and within it. Two lecture periods and one two-hour laboratory period weekly.

ES 101 Historical Geology (formerly ES 192)

3 crs.

Prq.: ES 100.

The origin and evolution of the earth and the life upon it. Two lecture periods and one two-hour laboratory period weekly.

ES 102 History of the Earth

3 crs.

Prq.: ES 100

Origin and evolution of the earth and the life upon it. Major topics are geologic time, origin, and evolution of the continents, continental drift, plate tectonics. (May not be taken for credit if student has taken ES 101).

ES 194 Environmental Geology

3 crs.

Waste disposal, slope stability, shoreline and hydrologic problems, seismic and perma frost conditions and other topics as they pertain to the geologic environment in selected physiographic provinces of North America will be studied.

**ES 201-202 Topics in Earth Science for
Elementary School Teachers**

1.5 crs. per semester

ES 201 is an introduction to the use of rocks, minerals and fossils, while ES 202 introduces the processes that mold the earth's surface such as running water, glaciers, winds, and waves.

Emphasis for both courses will be on investigations that can be conducted in the classroom or in the immediate vicinity of a school, with topics selected from, but not restricted to, nationally developed science curricula.

Offered on a quarter basis with two, one hour lectures and one, two hour lab.

ES 220 Ceramic Materials

3 crs.

Prq.: Permission of Instructor.

The geologic processes producing the raw ceramic materials, their identification, extraction and purification as well as chemical treatments to alter their physical and chemical properties. Also, the physical and chemical changes occurring in such materials during drying and firing.

- ES 230 Engineering Geology** 3 crs.
Prq.: Permission of Instructor.
Geologic controls of Engineering projects. Identification and treatment of problem areas.
- ES 240 Hydrology** 3 crs.
Prq.: Permission of Instructor.
Relations of surface to groundwater. Geologic controls of flow in ideal mathematical models and imperfect natural settings. Water supplies as reversible resource.
- ES 283 Structural Geology** 3 crs.
Prq.: ES 100.
Analysis and origin of rock structures. Two lecture periods and one, two-hour laboratory period weekly.
- ES 284 Geomorphology** 3 crs.
Prq.: ES 100 or consent of the Instructor.
Relationships between gradational and tectonic forces and the resulting surface configuration of the earth. Two lecture periods and one, two-hour laboratory period weekly.
- ES 300 Excursions in Geology** 3-6 crs.
Prq.: Permission of Instructor.
Preliminary lectures on a study area, followed by 1 to 6 weeks of interdisciplinary field study leading to final report. Travel and living expenses will be borne by students. Study areas will most likely be in the western U.S. although foreign areas are possible. This course is of interest to archaeology, biology, and geography majors as well as other students.
- ES 301 Astronomy I** 3 crs.
A study of the celestial sphere, motions of the moon and planets, and the history of man's attempts to understand these phenomena. There will be evening observation sessions and a trip to a nearby planetarium. Lab fee.
- ES 302 Astronomy II** 3 crs.
Prq.: MA 103, 104 or consent of the Instructor.
This course will be devoted to the study of the planets, the stars, stellar evolution, galaxies, cosmology and life in the universe. There will be evening observation sessions.
- ES 305 Introduction to Oceanography I** 3 crs.
Prq.: BI 101, BI 102, or consent of the Instructor.
Survey of marine life forms and of the chemistry of seawater.
- ES 306 Introduction to Oceanography II** 3 crs.
Prq.: MA 101, 102, or 103 and MA 104 or consent of the Instructor.
Ocean water temperature, circulation, salinity, instruments and methods of investigation.
- ES 310 Geophysics** 3 crs.
Prq.: Permission of Instructor.
A study of major earth forces, including discussions of the interior of the earth, heat distribution, convection and continental drift.
- ES 311 Geochemistry** 3 crs.
Prq.: Permission of Instructor.
Geological and chemical processes controlling the abundance and distribution of the elements at or near the earth's surface.
- ES 372 Mineralogy** 4 crs.
Prq.: ES 100 and CH 131.
Geometrical and X-ray crystallography followed by the determinative mineralogy of ore and rock-forming minerals. Two lecture periods and two, two-hour laboratory periods weekly.
- ES 373 Optical Mineralogy** 3 crs.
Prq.: ES 372.
Principles of optical crystallography. Measurement of optical constants with the polarizing microscope. One lecture period and two, two-hour laboratory periods weekly.

ES 374 Optical Petrology

3 crs.

Prq.: ES 373.

Systematic study of rocks and rock-forming minerals with emphasis upon the use of the polarizing microscope, interpretation of mineral assemblages, texture and structures, problems of petrogenesis. One lecture period and two, two-hour laboratory periods weekly.

ES 375 X-Ray Analysis

3 crs.

Prq.: Permission of Instructor.

Principles and methods of X-ray diffraction analysis. Theory and practice of preferred orientation chemical analysis by diffraction and fluorescence.

ES 413 Survey of Physical and Historical Geology

3 crs.

The structure and history of the earth as deduced from the study of life forms and their physical environment. Two lecture periods and one, two-hour laboratory period weekly. For Biology majors only.

ES 462 Geology of North America

3 crs.

Prq.: ES 100.

Physiographic provinces of North America in terms of geomorphology and structural relationships.

ES 463 Petrology

3 crs.

Prq.: ES 372.

Megascopic and microscopic classification of rocks and an introduction to petrogenesis. One lecture period and two, two-hour laboratory periods weekly.

ES 464 Economic Geology I

3 crs.

Prq.: ES 100.

Geochemical and physical processes that produce economic mineral deposits. Two lecture periods and one, two-hour laboratory period weekly.

ES 465 Economic Geology II

3 crs.

Prq.: ES 100.

Study of selected major metallic and non-metallic deposits, energy sources and hydrologic reserves. Methods of extraction and the resulting environmental impact. Two lecture periods and one, two-hour laboratory period weekly.

ES 466 Glacial Geology

3 crs.

Prq.: ES 100.

The mechanics of glacial origin and movement, and the erosive and depositional features produced. Emphasis on the Pleistocene of North America. Two lecture periods and one, two-hour laboratory period weekly.

ES 475 Paleontology

3 crs.

Prq.: ES 100, 101 or consent of the Instructor.

A survey of the fossil record stressing the most important invertebrate and vertebrate phyla and their environmental relationships. Two lecture periods and one, two-hour laboratory period weekly.

ES 476 Paleoenvironmental Reconstruction

3 crs.

Prq.: ES 100, 101 or consent of the Instructor.

Introduction to modern concepts and principles in sedimentology, paleoecology, and correlation; lithostratigraphic and biostratigraphic classification and interpretation of depositional and organic environments. Two lecture periods and one, two-hour laboratory period weekly.

ES 477 Micropaleontology

3 crs.

Prq.: Permission of Instructor.

Identification and analysis of selected microfossils, Homeomorphism, Sexual Polymorphism, and Evolution of microfossils. Ultra structures and the diagenesis.

ES 490 Field Methods in Geology

3 crs.

Prq.: ES 100, 101 or consent of the Instructor.

Collection, processing and interpretation of field data developed by geologic mapping. Presentation of geologic

reports involving maps, cross-sections and sample data. One lecture period and two, two-hour laboratory periods weekly.

ES 497 Research in Earth Science (formerly ES 472) 3 crs.

Preparation of a research paper in the Earth Sciences.

ES 498 Field Experiences in Earth Science 3-15 crs.

Prq.: Consent of Department.

Intended to provide an opportunity for senior earth science majors to gain practical experience in the field. Placements will be made in appropriate local, state and federal agencies as well as with private corporations.

ES 499 Directed Study in Earth Science 3-6 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

ES 502 Research credit to be arranged.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

ES 503 Directed Study credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

PHYSICAL GEOGRAPHY

GE 100 Man's Physical Environment (formerly ES 200) 3 crs.

An introduction to physical geography in which man-land relationships and the interaction of man with his total environment, including its landforms, atmosphere, climate, vegetation, and soils are examined. Field trips. Two lecture periods and one two-hour laboratory period weekly.

GE 120 Man's Physical World 3 crs.

This non-lab science course will treat the earth as the home of man. Basic concepts of physical geography will be studied including how man has changed the earth. (May not be taken for credit if student has taken GE 100.)

GE 196 Geography of Environmental Problems I 3 crs.

Interaction between man and his physical environment through the analysis of selected problems in population ecology, atmospheric pollution and climatic change, water resource characteristics and distribution, soil contamination and erosion, and perception of environmental hazards for human settlement such as hurricanes, drought, floodplains, coastal erosion, earthquakes, and landslides.

GE 216 Cartography 3 crs.

Theory and practice in the design and drafting of maps, graphs and charts for the graphic presentation of geographical and statistical information. One lecture period and four laboratory periods weekly.

GE 217 Air Photo Interpretation 3 crs.

Prq.: GE 100 or ES 100.

Theory and practice in extracting information about the earth's physical and cultural features from aerial photographs. Field experience in basic surveying techniques. One lecture period and two, two-hour laboratory periods weekly.

GE 220 Outdoor-Indoor Investigations in Physical Geography 2 crs.

Prq.: GE 100 or consent of Instructor.

A demonstration and experiment course in physical geography designed for students interested in presenting simple experiments and outdoor environmental problems for elementary school children. Outdoor laboratory units will cover selected topics in weather, energy (solar and water), landscape evaluation, and pollution. A number of indoor demonstrations will be reserved for inclement weather. Two-hour weekly investigations, including field trips.

GE 303 Meteorology

3 crs.

Prq.: GE 100 or consent of the Instructor.

Study of the basic atmospheric processes that result in weather, and regional weather systems. Basic instrumentation and practice in observing, data presentation, and interpretation of weather maps. Two lecture periods and one two-hour laboratory period weekly.

GE 304 Climatology

3 crs.

Prq.: consent of the Instructor.

Study of the elements and controls of climate emphasizing their effect on man and the environment, and man's response to and modification of climate. The world distribution of climatic regions. Instrumentation and practice in observing, data, presentation and analysis.

GE 307 Management and Preservation of Natural Environment

3 crs.

Prq.: Permission of the Instructor.

This course is devoted to a detailed examination of the occurrence, exploitation and conservation of natural resources, including minerals, soils, water, forests, grasslands, fisheries, wildlife, recreation areas and scenery. Public and private conservation policy is examined against current technical and philosophical developments. Emphasis is placed on conservation in the United States.

GE 354 Field Methods in Urban Geography

1-3 crs.

Prq.: GS 353.

A geographic analysis of local urban areas and their problems, and the application of concepts learned in GS 353. Hours arranged.

GE 361 Geography of Environmental Problems II

3 crs.

Prq.: ES 100 or GE 100 or consent of the Instructor.

Environmental problems are considered in this course from the geographer's point of view, problems such as population densities and distribution, balanced land use and its philosophical, esthetic, and scientific basis, the circulation of goods and people, and a comparison of levels of development.

GE 363 Field Methods in Economic Geography

1-3 crs.

Prq.: ES 362.

The testing of theories and concepts of economic location in the local area.

GE 410 Urban Land Use Mapping

3 crs.

Prq.: GS 353.

The process of mapping urban land uses will be studied with emphasis placed on field work. A total of 90 contact hours working in the field and in urban planning office is required of all students taking this course.

GE 411 Energy and Environment

3 crs.

This course is concerned with energy problems and energy resources. The study will include sources of supply, consumption patterns as well as the environmental effects of energy developments and utilization.

GE 412 Solar Energy

3 crs.

Prq.: GE 100 or GE 303 or ES 301 or a college level physics course or senior standing and the consent of Instructor. The nature of solar energy, its measurement and distribution. Factors affecting its availability on earth. Solar technology, collectors, storage and delivery systems. The relation of solar energy to the total energy problem and the environment.

GE 418 Thematic Mapping (Advanced Cartography)

3 crs.

Prq.: GE 216; also recommended are GE 217 and MA 110.

This course will mainly deal with the type of maps commonly prepared in planning offices and environmental agencies. While the emphasis will be on cartography, students will gain some field experience in survey, and data gathering in addition to map design, compilation and drafting.

GE 420 Principles of Urban and Regional Planning

3 crs.

Prq.: Consent of Instructor and/or GS 353.

An introduction to the process of planning which deals with the interrelationships of resources, facilities, activities, and people over time and space.

GE 471 Seminar in Geography

3 crs.

The historical development of methods and techniques used in geographic research. Preparation of a research paper on a problem selected from one of the subdivisions of geography. For senior Geography majors. Two periods weekly for three quarters.

GE 474 Quantitative Geography

2 crs.

Prq.: Consent of the Instructor.

The use of statistical techniques, and computer and model building methodology to analyze various spatial phenomena.

GE 497 Research in Geography (formerly ES 472)

3 crs.

Preparation of a research paper in Geography.

GE 498 Internship in Urban and Regional Planning

3-15 crs.

Prq.: Consent of Department.

Student internship in a local planning department. The purpose of this internship is to allow a student to become familiar with the various aspects of his urban interest.

GE 499 Directed Study in Geography

3-6 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

GE 500 Planning the Urban Environment

3 crs.

Philosophy and problems of urban and regional planning.

Department of Mathematics & Computer Science

Professor Murray Abramson, Chairperson

Associate Professors: Robert Bent, Joseph Chiccarelli, Hugo D'Alarcao,
Robert Lemos, Henry Mailloux, Michael Makokian, George Sethares.

Assistant Professors: Walter Gleason, Frank Lambiase, Thomas Moore, Richard Quindley,
I. Philip Scalisi, Donald Simpson, Robert Sutherland.

UNDERGRADUATE PROGRAMS

Bachelor of Arts/Bachelor of Science

Since mathematics is both a cultural and a technical field of study, the curriculum is planned with the following objectives:

- 1) to introduce students to mathematics as an important area of human thought;
- 2) to prepare students for careers in industry;
- 3) to prepare students planning to teach mathematics on the secondary level;
- 4) to serve needs of students in fields which rely on mathematics, e.g., experimental sciences, social sciences, and elementary education;
- 5) to give preparation to students for graduate study in mathematics and related fields.

Mathematics Major

All majors are required to take MA 101-102, MA 201-202, MA 290, MA 301, and MA 401. Five electives are to be chosen from groups A, B, C, and D below in accordance with the following guidelines:

- (1) For students preparing for careers in industry: two electives each from groups B and D and one elective from any of the four groups.
- (2) For students preparing for secondary school teaching: one elective each from groups A, B, C and two electives from any of the four groups.

Students who do not wish to elect options (1) or (2) may choose their five electives from any of the four groups with no more than two courses from group D. Those planning further graduate study are urged to take MA 302 and MA 402.

Group A: MA 302, MA 303, MA 349, MA 406

Group B: MA 316, MA 402, MA 403, MA 412, MA 415, MA 416

Group C: MA 304, MA 408, MA 490

Group D: MA 292, MA 382, MA 491

All majors must also successfully complete PH 243-244 and a one-year sequence of language study at the intermediate level, or its equivalent. A math major beginning a new foreign language is required to take only six hours of that language.

Students who are contemplating majoring in mathematics should be aware of the sequential nature of the course offerings. It is of prime importance that students consult with the Chairperson of the Department as soon as possible. This will enable them to plan their programs so that degree requirements may be completed within a four-year period.

Mathematics Minor

A minimum of eighteen hours is required. The student must take:

- (1) MA 101-102 or MA 103-104 or MA 220
- (2) At least one course selected from MA 202 or MA 223; MA 214 or MA 301
- (3) At least three courses selected from MA 105, MA 107, MA 108, MA 110, MA 111, MA 180, MA 190, MA 214, MA 216, MA 223, MA 290, MA 321 or any of the courses in the elective Groups A, B, C, D for mathematics majors.

No more than two courses selected from MA 101 through MA 108 inclusive may be used for the minor.

Computer Science Minor

Either MA 101-102 or MA 103-104

The remaining course sequences may be either of the following:

- (1) MA 290, MA 292, MA 301, and MA 382
- (2) MA 180 or MA 190, MA 292, MA 321, and MA 491

Variations of these typical models are acceptable subject to the approval of the Department.

GRADUATE PROGRAM

Master of Arts in Teaching

The Department of Mathematics offers a program leading to the degree of Master of Arts in Teaching with a concentration in mathematics. This program is designed primarily for teachers and future teachers of mathematics. It also prepares students for further graduate work in mathematics. Admission to the graduate program requires a minimum of eighteen credits of undergraduate mathematics or the approval of the Chairman of the Department. In addition to meeting general degree requirements, the student must complete the departmental concentration requirement by electing courses appropriate to his degree program. Students should receive approval from their advisor or from the Chairperson of the Department for those courses requiring permission of the department.

A minimum of 18 graduate credits in mathematics is required for the degree.

Additional information regarding the degree may be found in the Graduate School section of this catalogue.

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.A.T. degree requirements:

Any 100 level course, MA 201, MA 202, MA 214, MA 216, MA 220, MA 223, MA 310, MA 311, MA 321, MA 354, MA 450, MA 492, MA 493, MA 499.

COURSE OFFERINGS*

MA 101, 102 Calculus with Analytic Geometry I-II **4 crs. for each semester.**

Inequalities, functions and their graphs, the line and linear inequalities limits and continuity, differentiation of algebraic functions and applications. The definite integral and applications, analytic geometry of the conic sections, the trigonometric and exponential functions, parametric equations and polar coordinates, calculus of vectors in a plane. Required of all freshman candidates for a degree in Mathematics, Physics, or Chemistry. Open to other qualified freshmen with consent of the Department Chairman.

MA 103, 104 Mathematical Analysis I-II **3 crs. for each semester.**

Sets, algebraic functions and their graphs, topics from algebra, trigonometric functions and analytic trigonometry, logarithmic and exponential functions, analytic geometry of the line and conic sections, differentiation and integration of algebraic functions and their applications. Required of all freshman candidates for a degree in Biology or Earth Science.

MA 105 Topics in Mathematics **3 crs.**

Topics to be selected from: Elementary logic, number theory, geometry, algebra and finite mathematics. Recommended for Liberal Arts majors.

MA 106 Fundamentals of Mathematics **3 crs.**

Linear and quadratic equations, functions and their graphs, trigonometry, analytic geometry of the straight line and conic sections.

MA 107, 108 College Mathematics for Elementary Majors I-II **3 crs. for each semester.**

Theory of sets, relations and their properties, systems of numeration, axiomatic approach to the real number system through a study of the integers and rational numbers, elementary number theory, nonmetric and analytic geometry, groups, linear equations and inequalities, probability.

MA 110 Elementary Statistics I **3 crs.**

Variance, covariance, linear correlation, general regression lines, introduction to sampling theory; and the following distributions: normal, t, chi-square and F.

MA 111 Elementary Statistics II **3 crs.**

Prq.: MA 110.

A continuation of the topics in MA 110 with emphasis on experimental design.

MA 180 Computer Programming With Applications **3 crs.**

Prq.: Approval of the student's major department.

Approximately ten weeks of the course will be devoted to the following topics under the direction of a member of the Mathematics Department: Programming in the Basic language using the Kronos time-sharing system; Use of "canned" programs; Elementary data processing techniques; Solution of simple arithmetic and algebraic problems. Approximately five weeks of the course will be devoted to computer applications to problems arising in the student's major field of interest. The latter will be under the direction of a faculty member in the student's major field. Only one of the following may be offered for credit: MA 180, MA 190, MA 290.

MA 190 Introductory Computer Programming **3 crs.**

For non-science majors. Computer organization and software. Basic programming. Solution of simple arithmetic and algebraic problems. Elementary data processing techniques. A survey of computer applications in the social sciences and humanities. Only one of the following may be offered for credit: MA 180, MA 190, MA 290.

MA 201 Calculus with Analytic Geometry III **4 crs.**

Prq.: Permission of the Department.

Methods of integration and applications, solid analytic geometry, calculus of vectors in space, elements of infinite series, partial differentiation, multiple integration.

MA 202 Linear Algebra **4 crs.**

Vectors spaces, linear transformations, and matrices.

*See page 50 for general information regarding course offerings.

MA 214 Introduction to Modern Algebra

3 crs.

Prq.: MA 105 or MA 106 or MA 108 or Permission of the Department.
Linear congruences, groups, matrices, and linear systems.

MA 216 Analytic Geometry

3 crs.

Prq.: MA 105 or MA 106 or MA 108 or Permission of the Department.
Trigonometric functions and analytic trigonometry, analytic geometry of the straight line and conic sections.

MA 220 Introduction to Calculus

3 crs.

Prq.: MA 105 or MA 106 or MA 108 or Permission of the Department.
Functions and limits, derivatives and antiderivatives; the definite integral, differentiation of algebraic and transcendental functions, applications. Mathematics elective for non-science majors.

MA 223 Introduction to Linear Algebra

3 crs.

Prq.: MA 105 or MA 106 or MA 108 or Permission of the Department.
Matrices, determinants, vectors, systems of linear equations.

MA 290 Computer Science I

2 or 3 crs.

Prq.: MA 102, or MA 104.

For science majors only. Development of algorithms and programs. Solution to several numeric and non-numeric problems using BASIC programming language. Basic computer organization and software. Historical survey of computers, language and applications. Programming in the BASIC language on a PDP/8-1 computer and/or by time sharing on a CDC-6600 computer. Only one of the following may be offered for credit: MA 180, MA 190, MA 290.

MA 292 Computer Science II

3 crs.

Prq.: MA 290 or permission of the Department.

Survey of computer languages. Exposition of characteristics which make these languages appropriate for particular classes of problems. Solution of numerical problems using the FORTRAN language. Computer structure, machine language, digital representation of data, symbolic coding for the PDP-8/1. Programming in the FORTRAN language on the PDP-8/1 and/or by time sharing on a CDC-6600 computer with emphasis on the solution to scientific problems.

MA 301 Abstract Algebra I

3 crs.

Prq.: Permission of the Department.

Introduction to the theory of rings, integral domains and fields through a study of integers, rational numbers, real numbers, complex numbers and polynomials; elementary group theory.

MA 302 Abstract Algebra II

3 crs.

Prq.: MA 301.

Group theory, linear groups, rings and ideals, extensions of rings and fields.

MA 303 Number Theory

3 crs.

Prq.: Permission of the Department.

Development of the number system, the Euclidean Algorithm and its consequences, theory of congruences, number-theoretic functions, Diophantine equations, quadratic residues.

MA 304 Higher Geometry

3 crs.

Prq.: Permission of the Department.

Axiomatic systems, finite geometries, introduction to synthetic and analytic projective geometry, affine geometry, non-Euclidean geometry.

MA 310 COBOL Programming I

3 crs.

Prq.: MA 180 or MA 190 or MA 290.

Complete COBOL language; file organizations used in business data processing; applications. Special emphasis will be placed on the writing and documentation of programs to be read by others.

Program design techniques such as the use of linear control functions and the restricted use of branch statements will be applicable to any programming language.

- MA 311 COBOL Programming II** 3 crs.
Prq.: MA 310.
A continuation of topics in MA 310.
- MA 316 Differential Equations** 3 crs.
Prq.: MA 201.
Ordinary differential equations of first and second order, linear differential equations with constant coefficients, the Laplace transformation, applications.
- MA 317 Sequences and Series** 3 crs.
Prq.: MA 201.
Elementary point-set theory, Heine-Borel theorem, Cauchy sequences, convergence tests for infinite series, absolute convergence, power series, Taylor series and Fourier series.
- MA 321 Introduction to Probability** 3 crs.
Prq.: MA 105 or MA 106 or MA 108 or Permission of the Department.
Permutations and combinations, finite sample spaces, random variables, binomial distributions, statistical applications.
- MA 325 Foundations of Geometry** 3 crs.
Prq.: Permission of the Department.
A study of axiomatic systems, finite geometries, axiomatic Euclidean geometry, various non-Euclidean geometries, Klein's Erlangen program, transformation groups, invariant properties.
- MA 326 Projective Geometry** 3 crs.
Prq.: Permission of the Department.
The principle of duality, perspectivity, projectivity, harmonic sets, cross ratio, transformation groups, projective theory of conics.
- MA 349 Foundations of Mathematics** 3 crs.
Prq.: Permission of the Department.
Elements of set theory and logic, development of the basic number systems, Peano postulates, development of the natural numbers, the integers and rational numbers, real numbers, and Cauchy sequences.
- MA 354 Introduction to Modern Geometry** 3 crs.
Prq.: MA 107.
Plane geometric figures, curves and surfaces, congruence, measures, coordinate geometry, parallelism and similarity, non-Euclidean geometries.
- MA 382 Switching Theory** 3 crs.
Prq.: MA 301 and MA 290.
Boolean algebra and functions. Combinational and sequential logic nets, threshold logic, minimization theory, completeness theorems. Introduction to Automata theory.
- MA 401 Advanced Calculus I** 3 crs.
Prq.: MA 201.
Fundamental theorems on limits and continuity, properties of derivatives, functions of several variables, partial derivatives, multiple integrals.
- MA 402 Advanced Calculus II** 2 or 3 crs.
Prq.: MA 401 or Permission of the Department.
Sequences, infinite series, power series and expansions of functions, vector calculus. May be offered as a quarter of semester course.
- MA 403 Probability Theory** 3 crs.
Prq.: MA 201.
Permutations and combinations, calculus of probabilities, discrete and continuous random variables, expectation, elementary probability distributions, moment-generating functions, sample spaces.

MA 406 Theory of Sets and Elementary Logic **2 or 3 crs.**

Prq.: Permission of the Department.

Truth tables, rules of inference, method of proof, the algebra of sets and graphs of functions, cardinal numbers. May be offered as a quarter or semester course.

MA 408 History of Mathematics **3 crs.**

Prq.: Permission of the Department.

The development of elementary mathematics from ancient to modern time.

MA 412 Mathematical Statistics **3 crs.**

Prq.: MA 201 or Permission of the Department.

Fundamental statistical methods, tests of significance and estimation based on large or small samples, simple correlation, linear regression, statistical inference, sequential analysis.

MA 415 Numerical Analysis **3 crs.**

Prq.: MA 201.

Solution of algebraic and transcendental equations, general iteration method, Newton-Raphson method. Approximation of functions and curve fitting, Lagrange interpolation formula, Newton's forward difference method, method of least squares, orthogonality. Numerical integration, Euler-Cauchy technique.

MA 416 Applied Mathematics **3 crs.**

Prq.: MA 316 or Permission of the Department.

Fourier analysis, numerical solutions of ordinary and partial differential equations, integral equations, special functions.

MA 417 Vector Analysis **3 crs.**

Prq.: MA 201 or equivalent.

Elementary set theory, vector space theory, inner product spaces, vector algebra, vector differential calculus, differential invariants, integral vector calculus, Stoke's theorem.

MA 450 Topics in Mathematics for Elementary School Teachers **3 crs.**

Prq.: MA 107.

Equations and inequalities; point-set geometry; analytic geometry; measurement (including the metric system); introduction to computer science.

MA 490 Mathematics Seminar **2 or 3 crs.**

Prq.: MA 201, MA 202, and MA 301 or permission of the Department.

Topics to be selected from algebra, geometry, and analysis. May be offered as a quarter course or semester course.

MA 491 Computer Seminar **3 crs.**

Prq.: MA 292.

Interdisciplinary uses of computers. Problems arising through the increasing use of computers in our society. Seminar will be project oriented and students will present their work to the class for discussion and criticism.

MA 492 Statistics with Computer Programming I **3 crs.**

Prq.: Permission of Department.

Those topics covered will include: the mean, the mode, the median, variance, standard deviation, Pearson correlation coefficient, Spearman rank correlation coefficient, lines of regression, central limit theorem, and confidence intervals for the population mean. There will be an introduction to digital computers and computer programming with applications to statistical problems.

MA 493 Statistics with Computer Programming II **3 crs.**

Prq.: MA 492.

Among those topics covered will be hypothesis-testing, small and large sampling theory, Chi-square analysis, and one-way analysis of variance. There will be a continuation of the topics in computer programming.

MA 499 Directed Study in Mathematics

1-3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

MA 502 Research

credit to be arranged.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

MA 503 Directed Study

credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate study who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

MA 507 Topology

3 crs.

Prq.: MA 201 and MA 301 or equivalent.

Elements of point set topology, closed sets and open sets in metric spaces, continuous mappings, connection, separation theorems, and compactness.

MA 510 Group Theory

3 crs.

Prq.: MA 301 or equivalent.

Groups, subgroups, homomorphisms, normal subgroups and quotient groups, generators, normal structure and the Jordan-Holden theorem, direct products of groups.

MA 511 Ring Theory

3 crs.

Prq.: MA 301 or equivalent.

Examples of rings, ideals and homomorphisms, the Jacobson radical, direct sums, Boolean rings, rings with chain conditions.

MA 518 Topics in Analysis

3 crs.

Prq.: MA 401 or permission of the Department

Heine-Borel Theorem, Bolzano-Weierstrass Theorem, topology of the real line, sequences of functions, uniformly continuous functions.

MA 520 Real Analysis

3 crs.

Prq.: MA 401.

Sets and functions, sequences and series, metric spaces, Weierstrass Approximation Theorem, Riemann and Lebesgue integrals, Fourier Series.

MA 522 Complex Function Theory

3 crs.

Prq.: MA 401.

Analytic functions of a complex variable, differentiation and integration in the complex plane. Cauchy's theorems, infinite series. Laurent expansions, theory of residues. Formerly MA 418.

Department of Physics

Professor Richard F. Calusdian, Chairperson
Professors: Felix S. Palubinskas, George A. Weygand
Associate Professor: Raymond L. Blanchard

The Department of Physics strives to provide students with the necessary skills and knowledge to pursue successful careers in research, teaching, or further study in graduate programs. Programs in physics culminating in the degrees of Bachelor of Arts, Bachelor of Science, and Master of Arts in Teaching are offered.

UNDERGRADUATE PROGRAMS

Bachelor of Arts/Bachelor of Science

The Department of Physics offers a program leading to the Bachelor's degree in Physics. This program is sufficiently flexible to prepare a student for graduate school, industry, or secondary school teaching. Each student can plan a physics program, with the help of a faculty advisor, to meet specific future needs. One three credit mathematics course as an elective will allow the physics major who minors in secondary education to meet the Massachusetts State Certification requirement for teaching mathematics.

Students who are contemplating majoring in this department should be aware of the sequential nature of the course offerings. It is of prime importance that such students consult with the Chairperson of the Department as soon as possible. This will enable them to plan their programs so that degree requirements may be completed within a four-year period.

Physics Majors:

PH 243-244, 385, 387, 388, 389, 403; CH 141-142; MA 101-102, 201, 316 or their equivalent; a one-year sequence in foreign language at the intermediate level, or its equivalent.

Physics Minor

18 credits in Physics acceptable for the physics major

Physical Sciences Minor

18 credits in Physics and Chemistry, exclusive of CH 200 and PH 200.

GRADUATE PROGRAMS

Master of Arts in Teaching

The Department of Physics offers programs leading to the degree of Master of Arts in Teaching with a concentration in either physics or physical sciences. These programs are designed primarily for teachers and future teachers of physics or physical sciences. They also prepare a student for further graduate work in either of these areas.

In addition to meeting general degree requirements, the student must complete the departmental concentration requirement by electing courses appropriate to the degree program and approved by the advisor.

Additional information regarding the degree may be found in the Graduate School section of this catalogue.

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.A.T. degree requirements: PH 181, PH 182, PH 200, PH 202, PH 270, PH 301, PH 390, PH 499.

COURSE OFFERINGS***PH 181 Elements of Physics I****3 crs.**

Principles of mechanics, heat and sound. Two lecture periods and one two-hour laboratory period weekly.

PH 182 Elements of Physics II**3 crs.**

Prq.: PH 181.

Principles of electricity, magnetism, optics and modern physics. Two lecture periods and one two-hour laboratory weekly.

PH 200 Survey of Physics**3 crs.**

Elements of mechanics, heat, electricity, magnetism, optics and modern physics. Two lecture periods and one two-hour laboratory weekly.

PH 202 Modern Physics for the Humanist**3 crs.**

A study of 20th century man's attempts to understand the laws of nature and his relations to them. Among the topics to be considered are the theory of relativity, elementary particles, nuclear physics and the Manhattan project, quantum theory and applications to philosophy and technology.

PH 210 Optics Workshop**3 credits**

Prq.: PH 200 or equivalent.

Optical projects and experiments in geometrical and physical optics, including design, fabrication, testing, use and evaluation of optical elements and systems such as telescopes, microscopes, binocular devices and collimators.

PH 243 General Physics I**4 crs.**

Prq.: MA 101 or permission of the Department.

Calculus based study of mechanics and heat. Three lecture periods and one three-hour laboratory weekly.

PH 244 General Physics II**4 crs.**

Prq.: PH 243.

Calculus based study of electricity, magnetism and light. Three lecture periods and one three-hour laboratory weekly.

PH 270 Transportation for the Future-Physical Implications**3 crs.**

Elements of transport theory, physical principles and energy considerations. Modern and future vehicle design. Transport systems involving automobiles, monorails, air cushion and air film vehicles, composite and hybrid systems, hydrofoils, hovercraft. Future developments in cars, airplanes, ships.

PH 280 Energy and Its Social Uses**3 crs.**

Energy sources, transmission and consumption of power. Mechanical and electrical energy. Solar, Wind, Hydro-electric, Fossil Fuel Energy versus Nuclear Energy, Fission and Fusion energy, Thermodynamic principles and applications. Geothermal energy, Relative efficiencies, entropy and waste energy. Thermal pollution and global equilibrium. Economics of energy.

PH 301 Physics of Sports**3 crs.**

Prq.: Six credits in the natural sciences.

A review of required mathematics; the theory and application of classical mechanics to sports. This includes, kinematics, dynamics, momentum, work energy, hydrodynamics, and aerodynamics.

PH 371 Biophysics, Macroscopic Aspects**3 crs.**

Prq.: Consent of the Instructor.

The structure, function, and control of the skeletal, muscular, nervous, blood-vascular and other body systems of the human being on the macroscopic or large-system level. Three lecture periods.

PH 372 Biophysics, Microscopic Aspects**3 crs.**

Prq.: Consent of the Instructor.

The structure, function, and control of the human body on the microscopic or molecular level. May be taken independently of PH 371.

*See page 50 for general information regarding course offerings.

- PH 375 Wave Theory** 3 crs.
Prq.: PH 244, MA 201 or equivalent
The mathematics of wave motion; Electromagnetic theory and applications to reflection and refraction; Superposition of waves; Interference and diffraction; Fourier Optics.
- PH 381 Thermal Physics** 3 crs.
Prq.: PH 243, PH 244.
Thermodynamics; kinetic theory; and statistical mechanics.
- PH 385 Optics** 3 crs.
Prq.: PH 244.
Study of geometrical and physical optics. Three lecture periods weekly.
- PH 387 Modern Physics** 3 crs.
Prq.: PH 243, PH 244.
Theory of relativity; atomic structure; quantum theory; nuclear physics and elementary particles.
- PH 388 Electricity and Magnetism** 4 crs.
Prq.: PH 244.
The theory and applications of the fundamental equations of electromagnetism. Three lecture periods and one three-hour laboratory weekly.
- PH 389 Mechanics** 3 crs.
Prq.: PH 243.
Vector treatment of forces, torques; dynamics of particles and rigid bodies; work and energy; momentum; small oscillation theory; Lagrangian and Hamiltonian formulation of dynamics.
- PH 390 Research Problems in Physics** credits arranged.
Special projects for advanced students desiring individual instruction in the methods of physics research. Hours arranged.
- PH 391 Solid State Physics** 3 crs.
Prq.: PH 387.
Crystal structure, electric, magnetic and thermal properties of matter; transport properties; band theory; super conductivity.
- PH 392 Electronics** 4 crs.
Prq.: PH 244.
Study of electron tubes, semiconductors, and electronic circuits. Three lecture periods and one three-hour laboratory period weekly.
- PH 393 Special Topics in Modern Physics** 3 crs.
Prq.: PH 387
Topics to be chosen from among the areas of the theory of relativity. Quantum mechanics. Solid State and Nuclear Physics.
- PH 399 Experimental Physics** credits arranged.
Introduction to advanced experimental techniques of physics.
- PH 402 Quantum Mechanics** 3 crs.
Prq.: PH 403.
Wave nature of matter; the Schrodinger equation; application of the Schrodinger equation to the electron, the hydrogen atom, multi-electron atoms and radiation.
- PH 403 Mathematical Physics** 3 crs.
Prq.: PH 243, PH 244, MA 201.
Vector analysis; matrices, linear differential equations; Sturm-Liouville theory; Fourier series; orthogonal functions; Laplace transform.

PH 405 Nuclear Physics**3 crs.**

Prq.: PH 387.

Nuclear forces, nuclear models, nuclear reactions and radioactivity, and elementary particles.

PH 499 Directed Study in Physics**1-3 crs.**

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

PH 502 Research**credit to be arranged.**

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

PH 503 Directed Study**credit to be arranged.**

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

PH 583 Physics of the Atom**3 crs.**

Prq.: Permission of the Instructor.

A study of the atomic view of matter and radiation. Topics included are: the kinetic theory of gases, theory of the electron. Bohr's theory of the atom, many electron atoms, theory of molecules and spectra, and the theory of relativity.

PH 584 Physics of the Nucleus and Elementary Particles**3 crs.**

Prq.: Permission of the Instructor.

A study of the nucleus and relationship of the elementary particles. The topics included are: nuclear structure, radioactivity, nuclear reactions, nuclear accelerators, conservation laws, symmetry and invariance principles, unified view of the elementary particles, and cosmic rays.

PH 585 Physics of the Solid State**3 crs.**

Prq.: Permission of the Instructor.

A unified treatment of the basic models used to describe solid state phenomena. Topics included are: crystal structure; electric, magnetic, and thermal properties of matter, transport properties of metals and semi-conductors; band theory; super conductivity.

PH 587 Radiation Physics I**3 crs.**

Prq.: Permission of the Instructor.

Wave propagation and the electromagnetic spectrum, interference, diffraction, polarization, coherence theory, electromagnetic theory.

PH 588 Radiation Physics II**3 crs.**

Prq.: Permission of the Instructor.

Blackbody radiation, photo-electric effect, the Bohr Model of the Atom and Atomic Spectra, the Schrodinger equation and applications to radiation problems.

PH 589 Physics of the Solar System**3 crs.**

Prq.: Permission of the Instructor.

Physical properties and motion of the members of the Solar System and interplanetary medium.

PH 590 Astrophysics and Cosmology**3 crs.**

Prq.: Permission of the Instructor.

Physical properties of the stars, stellar evolution, galaxies and the structure and history of the universe.

PH 591 The Theory of Relativity**3 crs.**

Prq.: PH 244.

Historical background of the Special Theory of Relativity, the Lorentz Transformation, the Space-Time Continuum, applications to mechanics and electrodynamics, Mach's principle, equivalence principle, the general theory of relativity and applications to Cosmology.

PH 594 Special Topics in Junior High Science I

6 crs.

Prq.: Permission of the Instructor.

An introduction to the Junior High School science programs developed by the Princeton Project and by the Educational Research Council of America. Lectures, laboratory work, model classes, and field trips will be included in this course.

PH 595 Special Topics in Junior High Science II

3 crs.

Prq.: PH 594.

A continuation of the course PH 594 in which the Princeton Project and the Educational Research Council's Junior High science programs are studied and evaluated.

PH 597 Special Topics in Elementary Science

3 crs.

Prq.: Permission of the Instructor.

An introduction to the elementary science materials developed by the Science Curriculum Improvement Study and others. Special emphasis will be placed upon the study of the science content included in these materials. Lectures, laboratory work, seminars, workshops, and model classes will be included in this course.

Division of Professional Education

**Educational Services,
Elementary Education,
Health & Physical Education,
Instructional Media,
Library Science,
Secondary Education,
Guidance,
School Administration**

Divisional Director: Professor Ray Harper

The Division of Professional Education, through its departments of Educational Services, Elementary Education, Health and Physical Education, Instructional Media, Library Science, and Secondary Education offers undergraduate and graduate programs for the professional preparation of early, middle, and later childhood teachers and specialized school personnel, and for providing service to the schools of the region. The Burnell Campus School is a laboratory for students in any of the education majors. For students interested in a professional career in education, the Office of Teacher Preparation and Placement offers assistance from initial application of admission to the Teacher Education Program, through field-based experiences and formal student teaching, certification, and eventual placement in a professional position.

Students following the curricula leading to the Bachelor of Science in Education, when admitted to the Teacher Education Program, are prepared for teaching in pre-school centers, or in the elementary schools either as mainstream or special needs teachers. Students majoring in most of the curricula leading to a Bachelor of Arts or Bachelor of Science may minor in Secondary Education and, when admitted to the Teacher Education Program, be prepared for secondary school teaching. Graduate degree students seeking teacher certification are eligible for student teaching only after completing a minimum number of applicable program credits and after applying for and being admitted to the Teacher Education Program.

Four-year curricula leading to degrees and teacher certification are offered in the following fields:

Majors in . . .

Elementary Education (K-6)*
 Early Childhood Education (Pre-school — 3)
 Physical Education*
 Special Education

Minors in . . .

Instructional Media
 Library Science (Certified as School Librarian K-12)
 Secondary Education (7-12) with majors in . . .

| | |
|--|-------------------|
| Art | French* |
| Biology* | Geography |
| Chemistry* | History* |
| Communication Arts and Sciences* (Speech and Theatre) | Mathematics* |
| Earth Science* | Physics |
| English* | Political Science |
| | Spanish |

and major combinations for certification in Social Studies . . .

| | |
|-----------------------------|--------------------|
| Anthropology/History | Psychology/History |
| Behavioral Sciences/History | Sociology/History |

Baccalaureate degree programs having the above majors or minors satisfy current requirements for appropriate Massachusetts teaching certificates, and meet certification requirements of many other states through either reciprocity agreements with those states, or transcript evaluation.

Graduate curricula leading to the master's degree are offered in the following fields:

| | |
|---|---|
| Degree Program | Consult Department of . . . |
| Master of Arts in Teaching | Secondary Education (in conjunction with most of the academic departments of the College) |
| Master of Education in Special Education Special Education — Learning Disabilities | Educational Services |

*Program has been approved under the Interstate Certification Compact for certification reciprocity with 32 other states.

| | |
|-------------------------------|---|
| Elementary Education | Elementary Education |
| Elementary School Mathematics | |
| Reading | |
| Health Education | Health and Physical Education |
| Instructional Media | Instructional Media |
| School Librarianship | Library Science |
| Guidance | A description of these Divisional programs |
| School Administration | follows the Department of Secondary Education |
| Master of Science in | Health and Physical Education |
| Physical Education | |

ADMISSION TO TEACHER EDUCATION PROGRAM

The programs in professional education are designed as a series of experiences encompassing theoretical knowledge as well as its practical application through a sequence of field experiences culminating in student teaching. The goal of the program is the graduation of students with outstanding qualifications for teaching.

All undergraduate and graduate students preparing to teach and whose programs include student teaching and qualifying for teacher certification, must formally apply for, satisfy all selection criteria, and be admitted to a Teacher Education Program. After admission to a program, the student must qualify for retention and for admission to Off-Campus Student Teaching by maintaining a status of good standing in relation to the admission criteria and also must satisfy additional criteria, if any, established by his or her respective program.

The following requirements and criteria for admission to a Teacher Education Program and for admission to Off-Campus Student Teaching represent policies determined by the Teacher Preparation Committee and must be fulfilled by all students preparing to teach.

1. The Applicant must submit a medical form completed and signed by a physician to the College Health service before matriculating.
2. For compliance with the provisions of Chapter 71, Section 55B of the Acts of 1974 — TB exams for School Personnel — the applicant must secure a tuberculin skin test or chest x-ray before working with children in the schools. This is a requirement for an introduction to education course (ED 210, EE 220, EE 230, or SE 410) or any other pre-student teaching field experience, as well as student teaching. The applicant must submit the result to the College Health Office.
3. The undergraduate applicant for a Teacher Education Program must make formal application. The necessary form may be obtained from either the Office of Teacher Preparation and Placement in Tillinghast Hall or, while enrolled in an introduction to education course (ED 210, EE 220, EE 230, or SE 410), from the instructor of the course. The deadline for submitting a completed application to the Office of Teacher Preparation and Placement is March 1 of the Sophomore year, or for the transfer student who has completed the Sophomore year elsewhere, before the end of his or her first month of classes at Bridgewater State College.

The undergraduate student in the Division of Continuing Education, who is an applicant for a Teacher Education Program must make formal application by obtaining the necessary form from either the Office of Teacher Preparation and

Placement in Tillinghast Hall or from the Division of Continuing Education in the Library. The deadline for submitting a completed application to the Office of Teacher Preparation and Placement is March 1 of the last year of Sophomore status.

The graduate student who is an applicant for a Teacher Education Program must obtain the necessary application form from either the Office of Teacher Preparation and Placement in Tillinghast Hall or from the Division of Continuing Education Office in the Library. The deadline for submitting a completed application to the Office of Teacher Preparation and Placement is March 1 of the academic year prior to the year in which Off-Campus Student Teaching eligibility will be certified by the Office of the Graduate School (see below):

4. Admission into an undergraduate Teacher Education Program becomes effective when the applicant has been certified as having satisfied all of the admission criteria, but no earlier than at the beginning of the student's Junior year.
 - a. The following criteria have been established as minimum criteria for admission and retention in a Teacher Education Program.
 - 1) The undergraduate applicant must be a matriculated student at the College with a minimum Q.P.A. of 2.2 (effective September 1, 1975 for all new students).
 - 2) All entering freshmen and transfer students are required to submit a medical form completed by an appropriate physician. This includes a record of a tuberculin test and/or chest x-ray. A statement confirming that the applicant has met this criterion is sent by the College Health Office to the Office of Teacher Preparation and Placement.
 - 3) The applicant must show proficiency in written edited American English by submitting to the Office of Teacher Preparation and Placement a transcript of undergraduate work having marks of C or better in English composition, or by obtaining and submitting an equivalent score on a "challenge" or CLEP examination.
 - 4) The applicant must be certified by the Speech Proficiency Committee as having speech that:
is characterized by no apparent articulation disorders;
exhibits no phonotory, volume or rate patterns which would draw undue attention or interfere with intelligibility.
Speech proficiency screening is available to all incoming freshmen and transfer students at the beginning or prior to each academic year, usually at orientation sessions. A Certificate of Speech Proficiency is sent by the Speech Proficiency Committee to the Office of Teacher Preparation and Placement.
 - 5) All students are required to complete approximately forty contact hours working with children or youth in schools or other agencies as part of an introduction to education course (Ed 210, EE 220, EE 230, or SE 410) or through some other means approved by the appropriate education department chairperson. Certification of the satisfactory completion of this experience requirement is provided by the appropriate education department to the Office of Teacher Preparation and Placement.
 - 6) In addition, the following may be considered as constituting a basis for denial of admission or retention: evidence of specific behavior indicating

that impairment of physical or mental health will be likely to interfere with satisfactory performance as a future teacher.

- b. Any additional criteria which may be required by a particular Teacher Education Program to which admission is sought. Any such criteria may be obtained from the appropriate department office.

Announcements of acceptance into a Teacher Education Program will be made in April. Students not accepted into a Teacher Education Program will be referred to the Office of the Academic Dean for replanning of their program of study.

ADMISSION TO OFF-CAMPUS STUDENT TEACHING

Good standing in relation to the aforementioned criteria must be maintained.

The applicant for Off-Campus Student Teaching must obtain from, and file with, the Office of Teacher Preparation and Placement the appropriate application form:

- ... if an undergraduate, by March 1 of the Junior year
- ... if an undergraduate in the Division of Continuing Education, by March 1 of the year prior to the Off-Campus Student Teaching
- ... if a graduate student, one semester before Off-Campus Student Teaching is requested to begin — the student must first request the Graduate School to certify eligibility by letter to the Director of Teacher Preparation and Placement.

A current tuberculin test and/or chest x-ray must be submitted to the College Health Service before placement in Off-Campus Student Teaching.

No applications for Off-Campus Student Teaching assignments for the first semester will be accepted, nor assignment changed, after July 1; nor for the second semester after November 1.

Department of Educational Services

Professor Isabelle King, Acting Chairperson

Professor: V. James DiNardo

Associate Professor: Anthony DeLeo

Assistant Professors: Genevieve Ash, Trace Baldrate, Marilyn Barry,
Martha Jones, Paul Prescott

The Department of Educational Services provides a program in Special Education in which emphasis is placed on professional competencies necessary to become an effective teacher in this field. Emphasis is placed on the use of appropriate teaching procedures, materials and evaluation techniques, and practical experience in actual school situations is considered most important. This includes formal student teaching, and other required and voluntary experiences.

Departmental offerings also include graduate programs leading to the degree of Master of Education in Special Education or Special Education - Learning Disabilities.

UNDERGRADUATE PROGRAM

Bachelor of Science in Education

Special Education majors follow a program designed to meet the new Massachusetts approval (certification) standards. Under these standards the major program itself, rather than the individual records of the graduate, must be approved by the State Department of Education. Program approval under these new standards is being sought.

Present requirements include course work leading to Elementary Education Certification.

All students in a teacher education program must apply for admission, and be accepted in, the Teacher Education Program. Information on the Teacher Education Program may be found in the introductory section of the Division of Professional Education.

Special Education Major

SE 336, SE 410, SE 411, EE 330, EE 340, EE 350, EE 492, SE 417, EE 420, SE 424,
SE 425, ED 480, SE 491.

IM 311, CA 292, PY 224, PY 252, PY 327, MA 107, CA 200.

GRADUATE PROGRAMS

Special Education Committee

Professor: King (Committee Coordinator-Learning Disabilities)

Associate Professor: DeLeo (Committee Coordinator-Special Education)

Assistant Professors: Ash, Baldrate, Barry, Prescott

Master of Education in Special Education

A minimum of thirty-six approved graduate credits is required in this degree program. The Master of Education in Special Education is designed for present and future teachers of special needs children. It is primarily planned for experienced teachers, and only the following will be considered for admission:

- A. Persons who, prior to admission, hold Interim Approval (Certification) in Special Education; and
- B. Persons who hold Interim Approval (Certification) in Elementary, Secondary, Special Subject, or Support Area, and who are **not** interested in obtaining Interim Approval (Certification) in Special Education.

The graduate student's program in special education will be designed, under the direction of an advisor, to provide competencies through a non-categorical and/or cross-categorical program of study. As part of their program, students must complete the following curriculum:

1. Research Methods and Findings: GC 500 Research and Evaluation — 3 graduate credits.
2. Humanistic and Behavioral Studies: Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. Departmental Requirements: SE 410, SE 411, PY 327, and SE 513 — 12 graduate credits.
4. Program Electives: Courses appropriate to the degree program and approved by the advisor — 15 or more graduate credits.

For additional information relative to this program, persons not yet accepted should consult the program coordinator.

Ordinarily, Comprehensive Examinations are given by the Department during the months of November and April only. Special arrangements must be made prior to June by the student with his advisor, if the student wishes to take the Comprehensive Examination during July.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of Master of Education degree requirements: SE 409, SE 491, SE 494, and SE 499.

Master of Education in Special Education — Learning Disabilities.

A minimum of thirty-six approved graduate credits is required in this degree program. The program is designed for experienced certified teachers who are seeking further specialization without additional certification. Only those who have completed one year of successful full time classroom teaching in an accredited school will be considered for admission to the program. Applicants must file the Graduate School's form Certificate of Teaching as part of their application.

As part of their program, students must successfully complete the following curriculum:

1. **Research Methods and Findings:** GC 500 Research and Evaluation — 3 graduate credits.
2. **Humanistic and Behavioral Studies:** Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. **Departmental Requirements:** SE 515, SE 516, SE 517, SE 518, SE 519, and SE 555 — 21 graduate credits.
4. **Program Electives:** Courses appropriate to the degree program and approved by the advisor — 6 or more graduate credits.

For additional information relative to this program, students not yet accepted should consult with the program coordinator.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of Master of Education requirements: SE 309, SE 485, SE 487, SE 490, SE 494, and SE 499.

COURSE OFFERINGS*

SE 336 Teaching Reading in Special Education **3 crs.**

Basic reading principles and skills; appropriate correctional and remedial techniques and materials for the child with limited ability. Audiovisual materials, phonics, and the clinical approach to teaching will be stressed.

SE 409 Survey in Learning Disabilities **3 crs.**

Prq.: EE 330 or SE 336 or permission of Instructor.

An eclectic approach to etiology, classroom assessment, techniques and remediation of moderate special needs children.

SE 410 Introduction to Special Education **3 crs.**

A survey of all phases of education pertaining to special needs program opportunities. Emphasis on the characteristics and education of children in each area of exceptionality. Chapter 766 of the Acts of 1972 will receive consideration.

SE 411 Teaching Strategies in Special Education **3 crs.**

Prq.: SE 410.

Special emphasis is placed on planning, development, and guiding pupil experiences in the educational program for special needs students. Philosophy, general and specific aims, identification and assessment, and curriculum development are based on diagnostic-prescriptive concept.

SE 413 Industrial Arts in Special Education **3 crs.**

Prq.: SE 410.

The planning procedure, the necessary equipment, and the required techniques needed to implement both craft and industrial arts programs and to improve motor coordinative skills.

SE 415 Methods and Materials for the Academically Talented **3 crs.**

Prq.: PY 100.

Emphasis on the identification and placement of gifted pupils in our schools and the related program, enrichment activities, creative development, method and materials, modified curriculum, administration, motivation and treatment of underachievement.

SE 416 Teaching the Slow Learner **3 crs.**

Prq.: SE 410.

Emphasis is placed upon identification curriculum, methods of instruction, proper social and vocational adjustment, and concrete presentation of all academic activity for this type of pupil.

SE 417 Teaching Children With Behavioral and Learning Needs **3 crs.**

Prq.: PY 100 and SE 410.

The causes, extent, and recognition of behavioral and learning needs influencing cognitive and affective functioning. Teaching strategies are surveyed in conjunction with childhood counseling and therapeutic techniques modifiable, for classroom use.

SE 418 Etiology, Dynamics and Treatment of Children with Behavioral Needs **3 crs.**

Prq.: PY 100 and SE 410.

The causes, characteristics, behavioral aspects and accepted syndromes for identification will be emphasized as well as the psychiatric procedures involved.

SE 419 Occupational Training Programs in Special Education **3 crs.**

Prq.: PY 100 and SE 410.

Workstudy programs for special needs students will be carefully studied for the purpose of the most effective work/vocational placement and follow-up to insure gainful employment. Legal information and labor rights will be presented.

*See page 50 for general information regarding course offerings.

SE 422 Children With Severe Developmental Disability

3 crs.

Prq.: PY 100 and SE 410.

The complete responsibility of the school, the community and the residential school in regard to identification, training, physical facilities, and instructional techniques will receive consideration.

SE 424 Instructional Alternatives for Special Needs Children

2 crs.

Prq.: PY 100, SE 410.

A field-based approach to alternative instruction and administrative strategies for serving special needs children. The course will also stress major components of Chapter 766 and important functions of the special education staff. Three credits granted when taken for graduate credit.

SE 425 Classroom Management in Special Education

2 crs.

Prq.: PY 100, SE 410.

This course will focus on the background, basic principles and techniques necessary for effective development of behavior with special needs students. Emphasis will be placed on operant procedures that have been found effective for individual and classroom use. Three credits granted when taken for graduate credit.

SE 426 Workshop in Special Education

3 crs.

The practical aspects of special education techniques will be brought into focus through the use of off-campus facilities. In cooperation with area communities, activities will be carried out to find methods and techniques for utilization in both special needs and mainstream programs.

SE 427 Guidance & Counseling in Special Education

3 crs.

This course is occupational and vocational in orientation. Both the habilitative and dehabilitative processes are emphasized through the correlation of the backgrounds, abilities, disabilities, and interests of the individuals with special needs in the world of work. Consultant help and community resources are explored.

SE 428 Rehabilitation and Special Education

3 crs.

Prq.: PY 100 and SE 410.

Review of all of the procedures and processes of helping the mentally retarded, the physically handicapped, the emotionally disturbed, and the multi-handicapped through the medium of rehabilitation services.

SE 430 Principles and Practices in Guidance

3 crs.

The historical development and philosophical roots of the guidance movement; the need for guidance; the nature of the guidance services offered by schools and community agencies; the personnel, facilities and procedures involved; and the role of classroom teachers, administrators, support personnel and members of the community will be explored.

SE 491 Supervised Teaching in Public Schools - Special Education

6 crs.

Prq.: EE 492 and acceptance and good standing in Teacher Preparation Program.

Continuous supervised experiences under regular special class conditions will be provided. Experience will be gained in different teaching techniques, individual differences, and classroom management. Supervision by the cooperating teacher and the college supervisor should culminate in the assumption of at least one week of full time responsibility. Required of all Special Education majors.

SE 499 Directed Study in Special Education

1-3 crs.

Prq.: Consent of the Department

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

SE 502 Research

credit to be arranged

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

SE 503 Directed Study

credit to be arranged

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

SE 512 Organization and Administration of Special Education 3 crs.

Prq.: SE 410.

A comprehensive study of the psychological diagnosis, the personnel, the curriculum, the facilities, and the pupil services in an effective Special Education program.

SE 513 Seminar in Special Education 3 crs.

Prq.: At least 24 credits toward the M.Ed. in Special Education.

A careful research to help determine changes in this field so that improved services and techniques might be realized.

SE 515 Teacher Orientation to Learning Disabilities 3 crs.

Prq.: PY 224, SE 410.

Acquaint in-service teachers with current statistics concerning children with Moderate Special Needs and encourage appreciation of the wide spectrum of difficulties these children have. Diagnosis and evaluation will be studied in conjunction with the fields of perceptual handicaps, physiology, neurology, and psychology.

SE 516 Development of Visual and Perceptual Skills in Young Children 3 crs.

Prq.: SE 515, PY 252, or permission of the Instructor.

Development of vision as part of a sensory-action system with stress on the interaction between the functional and clinical aspects of vision care in the growing child. Considerable time devoted to the recognition of perceptual skills and classroom problems involved in learning and learning difficulties.

SE 517 Development of Thought and Language in Young Children 3 crs.

Prq.: SE 515 or permission of the Instructor.

Basic principles of child growth and development. Language development in the whole child will be complemented and supplemented with a concentration on language disorders, testing and remediation. The influence of developmental (and other) deviations in growth and learning will be considered in understanding language problems.

SE 518 Workshop in Learning Disabilities 6 crs.

Prq.: SE 515 or permission of the Instructor and ED 524.

Structuring the materials based on relating teaching theory to methodology in teaching moderate special needs children and the experimental tutoring with children previously diagnosed by clinics or core evaluations.

SE 519 Interpretation of Diagnostic Techniques 3 crs.

Prq.: SE 515.

Methods of differential diagnosis in moderate special needs with emphasis on interpretation of standardized test instruments and the development of profiles of learning style. Includes observation, recording and analysis of children's learning behavior and learning environments (including formal and informal assessments, criterion-referenced and norm referenced techniques.)

SE 526 Development of Auditory Perceptual Skills in Children 3 crs.

Prq.: SE 515.

This course will enable the participant to understand the hearing mechanism and its relation to learning through a study of the physiological, psychological, and audiological properties identified with audition. The participant will review current practices of remediation of auditory perceptual disabilities with methods and materials.

SE 555 Seminar in Learning Disabilities 3 crs.

Prq.: 9 graduate hours in learning disabilities or permission of the Instructor. Requirement: Scholarly research paper.

An examination of administration evaluation, and remediation of moderate special needs. Selected issues will be studied, such as clinical case studies, auditory-language problems, screening devices (both pre-school and ongoing), behavior modification, etc. Opportunities will be given to all students to pursue a topic of their own interest.

Department of Elementary Education

Associate Professor Wayne F. Dickinson, Chairperson

Professors: Robert Daniel, John Deasy, Robert MacCurdy

Associate Professors: Peter Bizinkauskas, Wayne Phillips, Dorothy Wood

Assistant Professors: Diana Draheim, Burton Goldman, John Jones,

Margery Kranyik, Rolf Ronning, Ronald Rossi, Gerald Thornell

Vincent Worden, Judith Deckers, Thomas Wolpert

UNDERGRADUATE PROGRAMS

Bachelor of Science in Education

ELEMENTARY EDUCATION

The Department of Elementary Education strives to provide the student with the professional competencies necessary to become an effective elementary teacher, including an understanding of how students learn, and an ability to use appropriate and varied teaching procedures, materials, and evaluation techniques. A very important part of elementary teacher preparation is the provision for student teaching in actual school situations.

All students in a teacher education program must apply for admission, and be accepted in, the Teacher Education Program. Information on the Teacher Education Program may be found in the introductory section of the Division of Professional Education.

Elementary Education Major

EE 220, EE 330, EE 340, EE 350, EE 390, EE 420, EE 462 or EE 460 and EE 470, ED 480, EE 492, HI 221, IM 310, PE 320, MA 107, three credits in Geography as a Social Science.

EARLY CHILDHOOD EDUCATION

The Department of Elementary Education offers a major in early childhood education which enables the student to prepare for career opportunities with young children from infancy through age eight. Students are provided with professional preparation in understanding stages of child growth and development, curriculum planning, teaching procedures and program evaluation.

Track I, through the selection of courses and practice teaching experience at the preschool and early primary levels, prepares students in the program of work in day care centers, nursery schools and other preschool child care service agencies.

Track II is designed to meet the needs of students wishing to specialize in kindergarten-primary education, and provides practice teaching experiences in kindergarten and grades one through three.

All students completing the program will be eligible to meet Commonwealth of Massachusetts teacher certification as well as child care licensing requirements.

All students in a teacher education program must apply for admission, and be accepted in, the Teacher Education Program. Information on the Teacher Education Program may be found in the introductory section of the Division of Professional Education.

Early Childhood Major

EE 230, EE 372, SE 409 or 410, EE 462, EE 474, ED 480, EE 496, CA 200, CA 292, CA 400, HI 221, HE 307, LI 310, MA 107, PE 320, PY 224 or 225, SO 202, SO 303 or 306, plus —

Track I, EE 361, EE 497

Track II, EE 370, EE 492

GRADUATE PROGRAMS

Master of Education in Elementary Education

The Department of Elementary Education offers a program leading to the degree of Master of Education in Elementary Education. This program is designed for teachers and future teachers of grades kindergarten through six. It is flexible enough to meet the needs of those with a background in the liberal arts as well as those who have an undergraduate major in elementary education.

A minimum of thirty approved graduate credits is required for this degree program. As part of their program, students must satisfactorily complete the following curriculum:

1. Research Methods and Findings: GC 500 Research and Evaluation — 3 graduate credits.
2. Humanistic and Behavioral Studies: Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. Departmental Requirements: EE 450 Elementary School Curriculum and EE 554 Graduate Seminar in Elementary Education — 6 graduate credits.
4. Program Electives: Courses appropriate to the degree program and approved by the advisor — 15 or more graduate credits.

For additional information relative to this program, students not yet accepted should consult with the departmental chairperson.

Graduate students planning to student teach at the elementary level must first

complete 21 graduate credits of approved degree work, or obtain permission from the Director of the Division of Professional Education.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.Ed. degree requirements: EE 220, EE 230, EE 390, EE 420, EE 492, EE 496, EE 497, and EE 499.

Master of Education in Elementary School Mathematics

The Department, in conjunction with the Department of Mathematics, offers a program leading to the degree of Master of Education in Elementary School Mathematics. This program is designed for teachers and future teachers of elementary mathematics. All candidates for the degree are required to take a minimum of 18 semester hours of content courses in mathematics as a combined total of undergraduate and graduate work. At least 6 of these semester hours must be taken at the graduate level (MA 214 and MA 216). A designated member of the Mathematics Department will advise each degree applicant upon entry into the program with regard to the mathematics courses which he or she should take. Degree candidates who have not had at least 6 semester hours of introductory modern mathematics must take MA 107 and/or MA 108 (College Mathematics for Elementary Majors I-II). It should be noted that these two courses may not be offered as credit toward the minimum of 30 credits required for the degree.

As part of their program, students must satisfactorily complete the following curriculum:

1. Research Methods and Findings: GC 500 Research and Evaluation — 3 graduate credits.
2. Humanistic and Behavioral Studies: Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. Departmental Requirements: EE 350, EE 351, EE 550, MA 214, and MA 216 — 15 graduate credits.
4. Program Electives: Education and/or mathematics courses appropriate to the degree program and approved by the advisor — 6 or more graduate credits.

For additional information relative to this program, students not yet accepted should consult the departmental chairperson.

Graduate students planning to student teach at the elementary level must first complete 21 graduate credits of approved degree work, or obtain permission from the Director of the Division of Professional Education.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.Ed. degree requirements: EE 220, EE 230, EE 390, EE 420, EE 492, EE 496, EE 497, and EE 499.

Reading Services Committee

Professor: Deasy

Associate Professor: Dickinson (Committee Coordinator)

Assistant Professors: Bizinkauskas, Deckers, Rossi

Master of Education in Reading

The program is designed to prepare experienced teachers for positions as reading

specialists at the elementary or secondary level. Only those who have completed one year of successful full-time classroom teaching in an accredited school will be considered for admission to the program. Applicants must file the Graduate School form Certificate of Teaching. A minimum of thirty-six approved degree credits is required in this degree program.

As part of their program, students must satisfactorily complete the following curriculum:

1. Research Methods and Findings: ED 595 Research in the Teaching of Reading or GC 500 Research and Evaluation — 3 graduate credits.
2. Humanistic and Behavioral Studies: Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. Departmental Requirements (which provide the theory, content, and professional practice of the specialty): EE 540, EE 541, EE 542, EE 543, and EE 544 — 15 graduate credits.
4. Program Electives: Courses in reading and/or related fields appropriate to the degree program and approved by the advisor — 12 or more graduate credits.

For additional information relative to this program, students not yet accepted should consult with the Committee Coordinator of the program.

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.Ed. requirements: EE 330, EE 436.

COURSE OFFERINGS*

EE 220 Introduction to Strategies of Teaching 3 crs.

Taken by sophomore elementary majors as their first course in professional education. Observation of elementary-age children in a classroom setting, opportunity for actively working with such children, confirmation of the choice of teaching as a career and the beginning of the development of skills needed to be a successful teacher.

EE 230 Introduction to Early Childhood Education 3 crs.

Survey of Early Childhood Education programs in relation to historical perspectives, philosophical foundations and sociological factors. Students will investigate and evaluate Head Start, Day Care Services, Montessori, Nursery School, Kindergarten and Primary Grades. Opportunities will be provided for field experiences.

EE 330 Teaching of Reading in the Elementary School 3 crs.

Prq.: PY 100.

A consideration of how reading instruction is initiated, how basic reading abilities are developed, and how growth in voluntary reading is encouraged. The essentials of an effective developmental reading program will be examined with attention to organizing groups and evaluating progress.

EE 331 Developmental Reading in the Secondary School 3 crs.

Prq.: PY 100.

The techniques used to develop reading skills in the secondary school, evaluation of the modern reading materials available, a study of techniques used to analyze students' reading needs and a survey of administration of reading programs in the secondary school with implications for teachers as well as administrators.

EE 340 Methods and Materials in Elementary Language Arts 3 crs.

Prq.: PY 100.

Stress on the new language-focused approach to English and the modern concepts of English grammar and usage. Creative strategies and ideas in teaching the skills and abilities of listening, speaking, and writing.

EE 350 Methods and Materials in Elementary Mathematics 3 crs.

Prq.: PY 100 and MA 107.

Acquaintance with the purpose and content of the contemporary elementary school mathematics curriculum. A wide variety of effective teaching procedures and instructional materials designed to meet the varying abilities within the elementary school classroom.

EE 351 Improving Mathematical Instruction in the Elementary School 3 crs.

Prq.: EE 350.

Appraisal of current mathematics programs, evaluation of individual pupils with a class, consideration of current instructional procedures and materials designed to provide for individual differences.

EE 361 Planning and Programming for Day Care 3 crs.

Presentation of a comprehensive view of Day Care today including developmental characteristics of young children, planning the environment, programming, licensing, staffing, community involvement, and parent relationships. Opportunities for field observations will be provided.

EE 362 Methods and Materials in Elementary Art 3 crs.

The objective of art education, role of the classroom teacher, developmental stages in the creative growth of children; materials, processes, tools and teaching procedures which will foster this growth at the various grade levels; correlation of art with other subject fields and evaluation of student progress.

EE 370 Kindergarten Theory and Methods 3 crs.

Prq.: PY 100.

The philosophy of modern kindergarten education including exploration of contemporary theories and strategies. Developmental characteristics and learning styles of the young child are studied and related to initial school experiences. Curriculum strategies and materials are examined and evaluated. Opportunities to observe the kindergarten child will be provided.

*See page 50 for general information regarding course offerings.

- EE 371 The Preschool** 3 crs.
Prq.: PY 100.
Current emphasis on the schooling of young children in a nursery school setting is the direction of this course. The psychological, physical, and emotional norms of this age group are explored. Current materials available to the teacher are examined. Recommended for those interested in the very young-nursery school and kindergarten teachers.
- EE 372 Success in Beginning Reading** 3 crs.
A thorough examination of the language and perceptual background that children bring to the learning tasks of kindergarten and grade one; the initial steps in developing reading and writing skills; and the possibilities for the creative uses of these skills in the primary grades.
- EE 390 Field Based Practicum** 6 crs.
Prq.: PY 100, EE 220, and acceptance and good standing in Teacher Preparation Program.
Community Public Schools serve as laboratories in which students engage in observation and participation in the teaching/learning process. Through active participation with the cooperating teacher the student will demonstrate an ability to sequence meaningful learning activities for individuals, small groups and total class instruction. The student teacher becomes an integral participant in the school community by gradually assuming the obligations of the classroom teacher. Throughout this experience the cooperating teacher and student teacher engage in a continuous evaluative dialogue which is designed to identify areas, strength and weakness so that alternative strategies might be employed to enhance the student teacher's professional growth.
- EE 420 Educational Measurement** 3 crs.
Procedures for developing and evaluating classroom teacher-made tests and a survey of standardized testing practices used in the K-12 program. Emphasis will be placed on the student's intended area and/or level of concentration.
- EE 435 Teacher Study Skills and the Uses of Reading** 3 crs.
Opportunities open to classroom teachers for promoting voluntary reading through individualized reading, classroom specialties and curricular related research projects. Consideration of the ways in which teachers can guide pupils to apply their basic reading skills as they study content subjects: locating, selecting, organizing information, preparing reports, setting their own purposes for reading.
- EE 436 Remedial Reading Techniques for Classroom Teachers** 3 crs.
Prq.: EE 330 or SE 336 or permission of Instructor.
Experience in analyzing learning needs, preparing remedial plans, and providing highly motivated, intensive instruction to overcome specific weaknesses. Testing and tutoring experiences with elementary children. Two lecture and two laboratory periods weekly.
- EE 441 Methods & Materials in Outdoor Education for the Elementary Teacher.** 3 crs.
New trends and practices in Elementary Curriculum and methods in outdoor education will be explored in a natural setting. Analysis of different approaches to curriculum construction, teaching procedures, integration of material to classroom and school setting will be implemented.
- EE 450 Elementary School Curriculum** 3 crs.
Prq.: PY 100.
Roles of the administrator, the teacher, the parent and the child in the development of the changing curriculum in the elementary school. Use of action research, in-service training, innovations for curriculum improvement, school organizations, team teaching, the non-graded school, individualized instruction, the revaluation of objectives, and democratic values.
- EE 452 Methods and Materials in Elementary Education** 3 crs.
Prq.: PY 100.
Effective ways of vitalizing the teaching-learning process through teacher-pupil planning, participation and evaluation. Emphasis on creative teaching and the individualized approach. Materials and strategies are examined in the light of correct issues.
- EE 454 Seminar in Elementary Education** 3 crs.
A culmination of all professional experiences in preparation for teaching. Included are review and evaluation of

Department of Elementary Education

current elementary school practices, discussion of professional ethics and school law, professional growth opportunities, procedures for securing a teaching position, and preparation for and the responsibilities of the first teaching position. Open to all senior elementary majors or by permission of the Chairman.

EE 455 Drug Education for the Elementary School Teacher

3 crs.

Prevention of drug abuse is the chief purpose of the course. How to acquaint elementary teachers with the causes and cure of the problem. A review of current methods and materials in drug education will be featured.

EE 456 Current Issues in Elementary Education

3 crs.

Prq.: PY 100 - 9 hours in Education.

This course focuses on influential issues in contemporary education. Specific emphasis is placed on the following topics: financial problems; moral and ethical considerations; interplay of educational techniques; the teacher as a person and a professional; the role of the school as a change-agent in society.

EE 460 Methods and Materials in Elementary Science

3 crs.

Prq.: PY 100.

Goals of elementary school science instruction and the methods of attaining them through "newer" science programs, problem-solving, experimentation, and varied instructional media are examined.

EE 462 Science and Social Studies Methods and Materials in Elementary Schools

3 crs.

Prq.: PY 100.

The goals of scientific inquiry and responsible citizenship. The establishment of objectives and the selection of appropriate methods, materials, and techniques of planning to meet these objectives. Current trends in the teaching of both science and social studies. Innovative ideas found in the newer programs.

EE 470 Methods and Materials in Elementary Social Studies

3 crs.

Prq.: PY 100.

Emphasis is placed on current trends including objectives, curriculum, creative pupil-teacher planning, teaching techniques involving extensive use of instructional media and study tours of New England.

EE 473 Improving Elementary School Social Studies

3-6 crs.

The intent of this course is to develop with the student a series of strategies, affective as well as cognitive, that combines the best elements of the teaching-learning experience in elementary school social studies. The newest trends and practices in social studies curriculum and methodology are explored in a laboratory context.

EE 474 Methods and Materials in Primary Education

3 crs.

Prq.: PY 100.

Ways of teaching primary grade children with a focus on Language Arts and Mathematics strategies and materials. Learning theories and methods of individualization stressing the child as a unique individual. Emphasis on classroom organization and the use of innovative teaching techniques.

EE 492 Supervised Teaching in Public Schools — Elementary

6 crs.

Prq.: Acceptance and good standing in Teacher Preparation Program.

Supervised experiences in classroom activities. Experiences gained in teaching techniques, individual differences and classroom management. Opportunities available in a variety of instructional environments. Supervision by the cooperating teacher and college supervisor.

EE 496 Student Teaching in the Kindergarten

6 crs.

An eight week field experience at the kindergarten level under the guidance of cooperating teachers and a college supervisor. Opportunities for participation in pupil observation, program planning and utilization of contemporary teaching strategies.

EE 497 Student Teaching in the Preschool

6 crs.

Supervised student teaching experience in a preschool setting with children infancy through age five. Emphasis on development, implementation and evaluation of innovative preschool programs. The student participates in a total program, five days a week for eight weeks in either Day Care Center, Nursery School or Head Start Program.

EE 499 Directed Study in Elementary Education

1-3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

EE 502 Research

credit to be arranged.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

EE 503 Directed Study

credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

EE 540 Improving Reading Instruction

3 crs.

Prq.: EE 330, EE 331, or equivalent basic course in the teaching of reading.

A consideration of how the teaching of reading can be improved through a thorough analysis of pupils' instructional needs, differentiated instruction in all essential skills, and a planned program to encourage voluntary reading. Current approaches and reading materials will be examined. The implications of differences among pupils in language and perceptual development, cognitive development and learning rate, and attitudes and values will be discussed.

EE 541 Diagnosis and Correction of Reading Disabilities I

3 crs.

Prq.: EE 540 or permission of the Instructor.

Designed to prepare both elementary and secondary remedial reading teachers. Part I of this course will emphasize the identification of specific instructional needs, development of remedial plans, and provision of highly motivated instruction to overcome indicated weaknesses.

EE 542 Diagnosis and Correction of Reading Disabilities II

3 crs.

Prq.: EE 541 or permission of the Instructor.

In Part II, attention will be focused on formal diagnostic procedures, theories of causation, and problems encountered in organizing and administering remedial programs.

EE 543 Effective Reading Programs

3 crs.

Prq.: 9 graduate credits in reading or permission of the Instructor.

Current and evolving practices and programs in the teaching of reading. Teachers, reading specialists and administrators will be helped to develop practical plans for insuring that their own reading programs successfully meet the needs of all their students.

EE 544 Seminar in Reading

3 crs.

Prq.: 18 credits toward the M.Ed. in Reading with a minimum of 9 credits in reading, or permission of the Instructor. Application of research methods and findings to the improvement of all aspects of reading and language instruction. Each student will make an extensive study of a significant problem related to the teaching or oral expression, written expression, reading, spelling or handwriting.

EE 545 Clinical Practicum in Remedial Reading

3 or 6 crs.

Prq.: Permission of the Instructor. Applications for this practicum should be made in advance.

A limited number of qualified students will be given opportunity for practice work in intensive remedial instruction.

EE 550 Practicum in the Elementary School Mathematics Program

3 to 6 crs.

Prq.: Completion of, or enrollment in, all other required courses in the degree program.

Students accepted will pursue an individualized program of advanced study and research, focused on a substantive topic pertaining to the elementary school mathematics program, and eventuating in an acceptable documented report. Periodic meetings will be scheduled by the instructor. Each student's program must be approved by the instructor and the department chairman.

EE 551 Discovering Science-A Survey of Current Elementary School Science Programs 3 crs.

Prq.: EE 460, EE 462 or permission of the Instructor.

The inductive programs for elementary science: Elementary Science Study, Minnesota Mathematics and Science Teaching Project, Science — A Process Approach, and the Science Curriculum Improvement Study. Their philosophy, psychology, materials, and methods of implementation.

EE 552 Methods and Materials for the Open Concept in Elementary Schools 3 crs.

An introduction to an accountable form of open education in which practical units, providing multiple learning experiences for children and applicable in the classroom, are designed. Learning experiences, learning activities, student contracts, independent study units, grouping, and classroom management are discussed and incorporated into the unit design.

EE 554 Graduate Seminar in Elementary Education 3 crs.

Prq.: 21 approved graduate credits with a minimum of 12 credits in elementary education.

An integration of formal study, current research and personal experience. Each student will make an extensive study of a significant problem in elementary teaching.

Department of Health & Physical Education

Professor Catherine Comeau, Chairperson

Professors: Patricia Phillips, Mary Lou Thornburg

Associate Professors: Regina Gross, Thomas Knudson,
Harry Lehmann, Edward C. Swenson

Assistant Professors: Edward Braun, Ann Coakley, Virginia Hogg,
Joseph Huber, Shirley Krasinski, James Martin, Peter Mazzaferro, Robert Mears,
Hazel Schopp, Eric Sills, Johanne Smith, Joseph Yeskewicz

Instructors: Thomas Arnold, Dayna Daniels, Frank Keane, Marjorie Rugen

UNDERGRADUATE PROGRAMS

Bachelor of Arts/Bachelor of Science

The department's curriculum has been revised and now offers a major in Physical Education with opportunities to select tracks (areas of specialization) in Health, Physical Education for the Pre-adolescent Child, Physical Education for Adolescents and Adults, Motor Development Therapist, Recreation, Athletic Trainer, or Coaching. Teacher certification in Health and/or Physical Education are additional options available through the Teacher Education Program.

The new curriculum provides greater career opportunities for students in a variety of areas related to physical education, and will also enhance the student's educational and professional preparation.

The revised curriculum will be implemented in phases so that for the class of 1981 the total curriculum will be implemented. Information relative to the implementation of the new curriculum for classes presently enrolled in the major may be obtained from the department.

Physical Education Major

PE 100, PE 101, PE 117, PE 217, PE 401 and 9 credits of physical education activity courses.

In addition to the major core, students may select from the following area specializations (Tracks) and/or Teacher Certification options:

Health (Open to all majors)

HE 102 plus four courses from the following: HE 300, HE 301, HE 305, HE 471, HE 474, HE 477, HE 478, HE 480

The tracks listed below are open only to Physical Education majors.

Physical Education for the Pre-Adolescent Child

PE 223, PE 324, PE 326, PE 327, PE 485, PE 497, PE 498, HE 302, HE 307, PY 224, PY 225

Physical Education for Adolescents and Adults

Physical Education activities (3 credits), PE 310, PE 324, PE 497, PE 498, PY 210, PY 226, PY 310

Motor Development Therapist

PE 324, PE 328, PE 498, SE 410, PY 300, PY 355

Recreation

PE 230, PE 332, PE 460, PE 461, PE 498. Two additional recreation courses as recommended by the department.

Athletic Trainer

PE 240, PE 324, PE 340, PE 450, PE 498, HE 302, HE 471, Techniques of coaching (Three 1 credit courses)

Coaching

Two techniques of coaching courses, Two officiating courses, PE 340, PE 414, PE 481, PE 498, HE 302

Teacher Certification in Physical Education

A. Acceptance in Teacher Education Program*

B. Meet the following prerequisites;

1. Physical Education major

2. Have taken one course in each of the following areas: Physical Education for the Pre-Adolescent Child, and Physical Education for Adolescents and Adults

3. PE 324

C. ED 480, PE 412, PE 492, PE 498

Teacher Certification in Health

A. Acceptance in Teacher Education Program*

B. Major in any discipline

C. Health Track

D. ED 480, HE 200, HE 492

*Information on the Teacher Education Program may be found in the introductory section of the Division of Professional Education.

GRADUATE PROGRAMS

Master of Education in Health Education*

The Health and Physical Education Department offer a program leading to the degree of Master of Education in Health Education. This program is designed for persons interested in teaching and other careers related to the health profession.

Prerequisites for the M.Ed. in Health Education:

Health — 6 credits

Psychology — 6 credits

A minimum of thirty approved graduate credits is required for this degree program. As part of their program, students must satisfactorily complete the following curriculum:

1. Research Methods and Findings: HE 507 Survey of Current Literature and Research in Health Education — 3 graduate credits.
2. Humanistic and Behavioral Studies: Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. Program Electives: a minimum of 21 graduate credits appropriate to the degree program and approved by the advisor. At least 15 of these elective credits must be in the area of health.

The following courses are the **only** departmental courses which may be taken for the M.Ed. in Health Education degree: HE 471, 474, 475, 477, 478, 479, 480, 502, 503, 507, 508, 511, 512, 513; PE 413, 439, 440, 470, 472, 474, 479, 481, 482, 483, 484, 502, 503, 506, 507, 508, 509, 510, 511, 512.

Master of Science in Physical Education*

This program is designed to prepare qualified students for teaching, research, and further graduate study in physical education. It is based upon a foundation in physical education, and endeavors to explore new areas in the field, as well as to expand upon those areas previously studied at the undergraduate level.

An undergraduate major in physical education is required for admission to the program. Applicants must have an interview with the Chairperson of the Department. No application will be considered unless this requirement has been met.

All students must satisfactorily complete a minimum of thirty graduate credits (approved by the advisor), a written and/or oral comprehensive examination, and an appropriate research study (either a thesis through PE 502 or acceptable work in PE 511).

All students must satisfactorily complete PE 506 Philosophy and Principles of Physical Education and either PE 502 Research or PE 511 Survey of Literature and Research in Physical Education.

The following courses are the **only** departmental courses which may be taken for the M.S. in Physical Education degree: PE 413, 439, 440, 470, 472, 473, 474, 479, 481, 482, 483, 484, 502, 503, 506, 507, 508, 509, 510, 511, 512; HE 471, 474, 475, 477, 478, 479, 480, 502, 503, 507, 508, 511, 512, 513.

*Because of the popularity of the Master of Education in Health Education and Master of Science in Physical Education programs, and because of the limited resources of the department, the number of graduate students admitted to these degree programs must be monitored carefully. Accordingly, students seeking admission to either of these programs are urged to consult with the Graduate School Office relative to their application and admissions chances at their earliest possible convenience.

COURSE OFFERINGS*

HEALTH

- HE 102 Health Science** 3 crs.
Attitudes and practices as they influence effective living; common adult health problems; community health standards and services; special problems of concern in the area of community health.
- HE 200 Principles and Practices of Health Education** 3 crs.
Selection of content for health courses with emphasis on current trends; analysis of the learning and teaching process as applied to health education.
- HE 300 Current Issues in Health Education** 3 crs.
Prq.: HE 102.
Designed to acquaint the student with current health issues and trends related to the school and community.
- HE 301 Human Sexuality** 3 crs.
Investigation of latest research relating to human sexual response, sexual attitudes and sexual values. Topics covered will also include homosexuality, masturbation, venereal disease, prostitution, abortion, birth control, premarital and extra marital relations.
- HE 302 First Aid** 1 cr.
Practical application of techniques used to care for the suddenly ill or injured. Successful completion will result in American Red Cross certification.
- HE 305 Drugs in Society** 3 crs.
Study of the impact of the environmental and cultural values affecting the drug using population. Views on sub-culture and alternative life styles and the forces that shape them. Understanding trends of modern treatment facilities and rehabilitation procedures. Emphasis on alternatives to drug use.
- HE 306 Drug Education for Teachers** 1 cr.
Overview of drug issues confronting classroom teachers. Exploration of teaching techniques, value systems, legal implications of teaching and confidentiality. Practical aspects of dealing with potentially controversial aspects of drug education.
- HE 307 Health Education in the Elementary School** 2 crs.
Study of the identification and appraisal of physical, emotional, and social health problems of elementary school children. Focus on teachers' approaches toward health education and the creation of an emotionally, socially and intellectually healthy classroom environment.
- HE 308 Health for the College Student** 3 crs.
An opportunity for the college student to better understand those health issues affecting him today. Areas covered include sexuality, marriage, family, drugs, alcohol, tobacco, emotional health and consumer health.
- HE 471 Nutrition Education** 3 crs.
Nutrition, and its relation to cultural patterns, dental health, and total health and fitness, weight control, and purchasing and preparation of food.
- HE 474 Community Health Education** 3 crs.
The history and development of public health programs, the relationships of health departments — local, state, and federal — public and private agencies, and the school health program. Problems and principles of the community health programs based on local needs. Designed for classroom teachers, health specialists, and others interested in community health.
- HE 475 Theoretical Basis of Health Instruction** 3 crs.
Prq.: 6 hours in health.
Investigation and student utilization of new and innovative teaching techniques. Philosophy and content of

*See page 50 for general information regarding course offerings.

health instruction is considered. Learning theories, behavior modification theories, and decision making exercises will be explored and practiced.

HE 477 Environmental Health **3 crs.**

Study of selected environmental influences, and how they affect health. Proposal and action orientated suggestions for bringing about change. Understanding pressure tactics, political influences, resistive forces and strategies for dealing with them. Exploration of legal structure, geographical difficulties, priority establishment and safety tolerances.

HE 478 Consumer Health **3 crs.**

Course designed to help people make informed decisions regarding their best use of health products and services. Topics to be covered include health insurance, life insurance, credit buying, quacks, patent medicines, fad diets, food buying, criteria for selecting health services. Identifying subtleties in advertising and understanding the misconceptions concerning health.

HE 479 Health Problems **3 crs.**

Prq.: 6 credits in health.

Current health problems relating to the school and community will be presented. Topics will be based on needs and interests of class participants. The school's responsibility for education in these areas will be discussed.

HE 480 Family Life and Sex Education **3 crs.**

Professional preparation for teachers of family life and sex education. Analyzing the role of the school and its relationship to the community. Determining curriculum, overcoming administrative and parental objections, dealing with specific problems of school age youth such as birth control, venereal disease, psychological and social aspects of sexuality.

HE 492 Supervised Student Teaching-Health **6 crs.**

Prq.: Consent of Department.

Full-time teaching for one quarter with supervision provided by members of the department faculty.

HE 498 Field Experience in Health **3-15 crs.**

Prq.: Consent of Department.

A field experience offers qualified students the opportunity to gain practical experience within their major. Placements are made in both public and private agencies and are designed to complement a student's track in health.

HE 499 Directed Study in Health **1-3 crs.**

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

HE 502 Research **credit to be arranged**

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

HE 503 Directed Study **credit to be arranged**

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

HE 507 Survey of Current Literature and Research in Health Education **3 crs.**

Prq.: A minimum of 15 credit hours in the Master of Education in Health Education degree program.

This course will enable students to more critically consider recent research and current opinions of those leaders in the field who write about health education. Article writing and reviewing will be encouraged and aided. Journals in sociology, psychology, paramedical education as well as health will be considered. This course will also aid in selecting and defining a thesis topic.

HE 508 Health Crisis Intervention **3 crs.**

Prq.: 6 hours in health.

Dealing with mental, emotional and social health problems of the individual, the family and society. Exploration

Department of Health and Physical Education

of suicide education, death education and psychosomatic illness. Investigation and practice of techniques of aiding potential suicide, tripping drug user, chronic alcoholic, obese, neurotic, promiscuous, geriatric problems and health care availability. Course will consider agency roles in these areas.

HE 511 Evaluation of School Health Programs

3 crs.

Prq.: 12 hours in health.

Study of the total school health program. Construction and application of an instrument to determine extent of program. School visitations are included.

HE 512 Humanistic Approach to Drug Education

3 crs.

A humanistic approach to drug education with emphasis on: available resources; educational modalities, effecting curriculum change; the communication process; attitudes and values; and teaching methods. Lecturers will include experts from the field of drug education.

HE 513 Cultural Approaches to Health Education

3 crs.

Prq.: 3 hours in Sociology.

Anthropological, sociological, psychological and physiological factors related to health behavior of sub-cultured groups. Concerns health knowledge, attitudes, values and behavioral practice of various religious and ethnic groups.

PHYSICAL EDUCATION

PE 100 Anatomy (formerly HE 100)

3 crs.

Includes a fundamental study of the human body and its parts, with special emphasis on bones, muscles, and tissues.

PE 101 Kinesiology (formerly HE 101)

3 crs.

Prq.: PE 100.

Detailed anatomical and mechanical analyses of fundamental motor skills.

PE 116 Introduction to Physical Education

3 crs.

An overview of the field of Physical Education as an integral part of education with emphasis on current trends, philosophy, objectives, relationship of the field to man, society and the role and responsibilities of the Physical Educator.

PE 117 Foundations in Study of Human Movement

3 crs.

An historical study of the development of man and movement will be undertaken with emphasis on the biological, psychological, sociological, cultural and philosophical implications. This course is designed to lay the foundation and provide for the understandings necessary to approach the study of physical education as a discipline in the twentieth century.

PE 124 Introduction to Physical Education Laboratory

1 cr.

Fundamentals of movement as it relates to all physical activity.

PE 216 Physical Education Curriculum

3 crs.

Study of current trends and theories of curriculum design and their application to the development of the Physical Education Program, Grades K-12.

PE 217 Principles of Motor Learning

3 crs.

Introduces the student to the concepts and principles concerned with learning and performance of movement skills.

PE 219 Movement Education in Elementary Schools

4 crs.

Designed to introduce the movement experiences of children in the elementary schools. Emphasis is placed on self awareness through movement, on discovering and understanding the environment and on controlling and adjusting to the environment. 4 periods weekly.

PE 220 Expressive Movement

3 crs.

Creative exploration of individual and group movement to develop the kinesthetic sense and its artistic use. These movement experiences will help the individual's projection of self in his interaction and communication with others.

- PE 221 Aesthetics of Sport and Dance** 2 crs.
An examination of the theories used to explain that which precipitates the aesthetic emotion. Emphasis will be given to the research dealing with significant form and dynamic symmetry which is currently being published in aesthetics in sport and dance. Also the epistemological concepts governing static form and dynamic form.
- PE 222 The Art and Sport of Fencing** 2 crs.
A survey of the history and development of fencing as art and sport. Consideration of the different weapons, periods of history, styles and schools of fencing, application to Theatre Productions.
- PE 223 Play Theory and the Play Environment** 3 crs.
Provides theoretical foundations for play based on classical and modern theories and on research findings.
- PE 230 Introduction to Recreation** 3 crs.
The history of recreation from colonial days to present. Particular emphasis is placed on the cultural views and their relationship to recreation. The various types of recreation presently seen and the impact of leisure time on the future will also be discussed.
- PE 240 Fundamentals of Athletic Training** 3 crs.
Organizational and operational features, role and responsibilities of the athletic trainer and principles of athletic fitness will be included. The classroom experience will be enhanced by personal observation of the training room.
- PE 310 Physical Education for Adolescents and Adults** 3 crs.
Prq.: Consent of Instructor.
An analysis of Physical Education programs planned specifically for meeting the sociological, psychological, and physiological needs of adolescents, adults, and senior citizens. Opportunities will be provided for the observation of existing programs.
- PE 320 Physical Education for the Elementary Classroom Teacher** 2 or 3 crs.
A study of the philosophy and objectives of the elementary school physical education program. Emphasis on the role and responsibilities of the classroom teacher in the program with laboratory experiences teaching children.
- PE 321 Secondary School Physical Education** 3 crs.
In depth study of physical education program grades 7-12. Emphasis on educational philosophies and policies, teaching-learning process, and program implementation in the contemporary setting.
- PE 322 Rhythmic Analysis in Dance and Related Movement** 3 crs.
Prq.: 3 semester of PE activities.
Emphasis on relationship of rhythm and basic dance skills, composition of dances, motor skills performed to music or to rhythm, and methods of teaching folk, round, and square dance.
- PE 324 Developmental and Adapted Physical Education** 3 crs.
Prq.: PE 217.
A course designed to provide students with basic knowledges and skills to plan, implement, and evaluate motor development and physical education programs for Special Needs Children and Youth. Emphasis is placed on the study of learning disabilities, mental retardation, sensory disorders, orthopedic disabilities, body mechanics disorders and nutritional disturbances. Opportunities for practicum experiences are of primary importance. Observations and tours of local agencies and schools are included.
- PE 326 Fundamentals of Movement Education** 2 crs.
Analysis and application of components of Movement Education for Early Childhood through the primary grades.
- PE 327 Movement Experiences for Children in Upper Elementary Grades** 2 crs.
A practical application of specific skills and refined movement patterns related to games, rhythmic activities, sports and gymnastics.
- PE 328 Advanced Study of Motor Programs for Special Needs Children and Youth** 3 crs.
Prq.: PE 217, PE 324
Included is the study of chronic medical problems, the disadvantaged child, multi-handicapped children and

the aged. A culmination of professional experiences to include a study of advanced techniques of motor assessment, methods and case study techniques. The roles of the adapted physical educator and the motor development therapist as a resource and itinerant teacher will be studied.

PE 330 Theory and Principles of Recreation 3 crs.

A study of work, leisure, play and recreation with attention given to sound principles of recreation.

PE 331 Outdoor Recreation Resources 3 crs.

Study and application of outdoor recreation skills in camping, mountaineering and canoeing, with analysis of design and effective use of national and state parks, preserves and monuments.

PE 332 Recreation Leadership 3 crs.

Leadership qualifications and responsibilities in recreation programs for community, school and camp settings. Includes principles of group organization and leadership for voluntary recreational activities and relationship of leadership to program design and implementation.

PE 333 Camp Leadership and Organized Camping 3 crs.

A study of organized camps and camping programs with particular emphasis on program planning, selection and training of staff, and administrative details in organized camping.

PE 340 Principles and Practices in Athletic Training 3 crs.

Recognition, understanding, and management of athletic injuries, sound conditioning and rehabilitation programs, the use of therapeutic modalities, as well as a laboratory section covering protective equipment and practice in taping and bandaging.

PE 401 Physiology of Exercise (formerly HE 401) 3 crs.

Prq.: BI 385.

Includes the study of various systems, their interrelationships and adjustments during exercise and as a result of training. Emphasis is on current research findings and what remains to be discovered in man as a moving being. 2 hours lecture and 2 hours laboratory.

PE 410 Physical Education in Agency Programs 3 crs.

In depth study of physical education within the social agency setting with emphasis on program development and instruction supplementing the normal school program.

PE 411 Organization and Administration of Health, Physical Education and Recreation 3 crs.

Development of policies; administrative practices; interfaculty and intrastaff relationships; supervision; public relations; fiscal practices; development and use of facilities.

PE 412 Planning, Implementation, and Evaluation in Teaching Physical Education 6 crs.

Prq.: PE 324, plus one course in P.E. for Pre-Adolescents and one from P.E. for Adolescents and Adults.

Designed to develop teaching competencies related to the planning, implementation, and evaluation aspects of instructional programs in physical education. To provide methods of enhancing teacher-pupil behaviors and creative learning environments.

PE 413 Current Issues in Physical Education 3 crs.

The examination and description of contemporary forces and trends in education and their implications for physical education. Opportunities will be available for students to present orally and in writing ideas relevant to professional concerns.

PE 414 Coaching 3 crs.

The application of teaching and learning principles as related to the player, team, coach and athletic program. Areas to be included will be psychology and philosophy of coaching, organization and administration of the program, coaching techniques, conditioning and evaluative procedures.

PE 415 Methods and Techniques in Coaching Baseball 1 cr.

Individuals offensive and defensive fundamentals; offensive and defensive team play; administration.

- PE 416 Methods and Techniques in Coaching Basketball** 1 cr.
The theory and practice of basketball coaching; including the study of offensive and defensive systems, drills, training and conditioning of basketball squads.
- PE 417 Methods and Techniques in Coaching Football** 1 cr.
History of football; fundamentals of line and backfield play; team defense and offense; field generalship; scouting; athletic injuries; study of rules.
- PE 418 Methods and Techniques in Coaching Gymnastics** 1 cr.
Emphasis on teaching techniques to help develop a competitive Gymnastics Team.
- PE 419 Methods and Techniques in Coaching Ice Hockey** 1 cr.
Practice and Theory of Fundamental Ice Hockey Techniques.
- PE 420 Methods and Techniques in Coaching Lacrosse** 1 cr.
The theory and practice of Lacrosse coaching; including the study of offensive and defensive fundamentals and systems, drills, training and conditioning of Lacrosse squads.
- PE 421 Methods and Techniques in Coaching Soccer** 1 cr.
Teaching the skills of kicking, trapping, heading, dribbling, tackling, throwing; defensive and offensive soccer.
- PE 422 Methods and Techniques in Coaching Track and Field** 1 cr.
How to train for track and field events. Form and technique in track and field.
- PE 423 Methods and Techniques in Coaching Swimming** 1 cr.
Open to all students who have an American Red Cross Senior Life Saving Certificate. Emphasis placed on organizing, developing, and training Swim Teams on the Age Group and High School level.
- PE 424 Methods and Techniques in Coaching Wrestling** 1 cr.
Fundamentals in free-style wrestling with emphasis on basic maneuvers. Theory and practice work.
- PE 425 Officiating Baseball** 1 cr.
Rules and techniques in officiating baseball; organizations of officials; practical experience.
- PE 426 Officiating Basketball** 1 cr.
Techniques of officiating Basketball. Practical as well as theoretical examinations are included with opportunity to earn a recognized rating.
- PE 427 Officiating Football** 1 cr.
Rules and techniques in officiating football; organizations of officials; practical experience.
- PE 428 Officiating Soccer** 1 cr.
Rules and techniques in officiating soccer; organizations of officials; practical experience.
- PE 429 Officiating Field Hockey** 1 cr.
Techniques of officiating Field Hockey. Practical as well as theoretical examinations are included with opportunity to earn a recognized rating.
- PE 431 Officiating Volleyball** 1 cr.
Techniques of officiating Volleyball. Practical as well as theoretical examinations are included with opportunity to earn a recognized rating.
- PE 439 Analysis and Application of Teacher Behavior** 3 crs.
Analysis of verbal and non-verbal teaching behavior through direct observation techniques with focus on the teaching of health and physical education. Course will include specific categories of teaching behavior and styles of teaching, review of the literature related to teaching effectiveness, direct observation of teaching and micro-teaching.

- PE 440 Scientific Basis of Coaching** 3 crs.
Examination of the physiological considerations and mechanical principles in coaching both individual and team sports. Emphasis will be on training and the improvement of skill.
- PE 450 Administration of Athletic Training** 3 crs.
Budget and equipment/supply inventory, operational policies and procedures, record-keeping, liability of the athletic trainer and preparation for an athletic contest.
- PE 460 Park and Recreation Facilities** 3 crs.
A study of planning, development, and maintenance of parks and recreation facilities, includes inspection of areas and preparation of plans.
- PE 461 Organization and Administration of Public Recreation** 3 crs.
Organization and administration of recreation of Federal, State, and local levels; legislative provisions, governmental control, financing, budget, personnel, departmental organization, and administrative practices.
- PE 462 Social Recreation** 3 crs.
Planning, conducting and evaluating activities and programs for various types of social events and age groups.
- PE 463 Field Problems in Recreation** 3 crs.
Prq.: Permission of Instructor.
A study of selected problems in various areas of recreation through guided individual and group field experience.
- PE 468 Programs in Recreation (formerly 478)** 3 crs.
The fundamental aspects of program planning in recreation. The programs of various agencies, both public and private, will be discussed. Items given special attention are: Senior Citizens Programs, Physically and Mentally Retarded Programs and Pre-primary Programs.
- PE 470 Sociology of Sport** 3 crs.
Prq.: 3 credits in sociology.
Examination and analysis of the types of forces at work in American society and how they relate to sports. Among the topics to be included are the influences of our cultural heritage, philosophy of education, politics, religion, economy, ethnics, mass media, and internationalism. Lectures, readings, class discussions, and written assignments will be directed toward enhancing the individual's understanding of the values of sport in our society yesterday, today, and tomorrow.
- PE 471 Psycho/Social Aspects of Sports** 3 crs.
Prq.: PY 100, SO 202.
This course is designed to provide for a study of the relationship between sport activities and the psychological nature of man as a study in the sociocultural process.
- PE 472 Measurement and Evaluation in Physical Education** 3 crs.
Prq.: MA 110 or its equivalent.
The construction and use of written tests, skill tests, and other measurement devices in physical education, methods of administration and use of data.
- PE 474 Teaching and Calling the Modern Square Dance** 3 crs.
Make-up and place of modern square dance in the physical education curriculum. Basics included in the modern square dance will be presented in progression. The techniques of teaching will be emphasized as students are taught to perform these fundamentals. The method of learning to call individual basics will be stressed and emphasis placed on the mechanics and function of each.
- PE 479 Problems in Physical Education and Athletics** 3 crs.
The recognition, discussion, and systematic analysis of controversial issues and problems. Topics studied are: optimum use of facilities, ethical practices, finance relationships with non-school programs, interscholastic athletic competition below high school level, youth fitness, crowd control, injury prevention, program evaluation, and community organization for health, physical education, and recreation.

PE 481 Organization and Administration and School Athletics **3 crs.**

Athletic policies and regulations on the local and state levels, administrative plans, contest management, the purchase and care of equipment, athletic awards, finance and budget, athletic facilities, scheduling, public relations, the intramural program, and trends in interscholastic athletics.

PE 482 Public Relations in Physical Education **3 crs.**

The study of a public relations philosophy, as well as specific and practical techniques. Planning and preparation of annual reports, speeches, brochures, displays, demonstrations and press releases. Course projects are planned to help upgrade the public relations programs in the departments and schools represented.

PE 483 Current Trends in Dance and Sport **3 crs.**

Advanced techniques and methods of teaching selected sports, gymnastics, and dance. Strategy in game play and competitive gymnastics will be included. Both theoretical and practical experiences provided.

PE 484 Physical Education for Exceptional Children and Youth **3 crs.**

The planning and development of physical education programs considered appropriate to the needs, interests and abilities of exceptional children and youth. Emphasis will be placed on the contribution that physical education can make to the education and well being of the physically, mentally and emotionally handicapped child.

PE 485 Integration of Physical Activity: Home, School and Community **3 crs.**

Prq.: PE 223, PE 326, PE 327

Provides an awareness of potential interrelationships between classroom, home, and community environments with physical education activities.

PE 492 Supervised Student Teaching — Physical Education **6 crs.**

Prq.: Consent of Department.

Full-time teaching for one quarter with supervision provided by members of the department faculty.

PE 497 Research in Physical Education **3 crs.**

Prq.: Consent of Instructor.

A review of the literature within an area and/or age of interest as it relates to Physical Education. Emphasis will be on the development of research problems and the reporting of research findings.

PE 498 Field Experience in Physical Education **3-15 crs.**

Prq.: Consent of Department.

A field experience offers qualified students the opportunity to gain practical experience within their major. Placements are made in both public and private agencies and are designed to complement a student's track within the major.

PE 499 Directed Study in Physical Education **1-3 crs.**

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

PE 502 Research **credit to be arranged.**

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

PE 503 Directed Study **credit to be arranged.**

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

PE 506 Philosophy and Principles of Physical Education **3 crs.**

Prq.: 6 credits in physical education.

Philosophical inquiry into the discipline of physical education including a study of trends and forces in education as they affect the field.

PE 507 The Child and His Movement Behavior **3 crs.**

Prq.: 12 credits in physical education or permission of the Instructor.

Current concepts and trends related to movement experiences of children with emphasis on developmental movement, and learning.

PE 508 Motor Learning **3 crs.**

Prq.: 3 credits in psychology.

Integration of biological and psychological concepts in the acquisition of motor skills including environmental conditions, developmental factors and learning theories.

PE 509 Mechanical Analysis of Movement **3 crs.**

Prq.: a course in physics of kinesiology.

Scientific principles applied to human motion with emphasis on the analysis of human movement for the purpose of improving teaching and coaching techniques.

PE 510 Concepts of Curriculum Development **3 crs.**

Prq.: 9 credits in physical education or permission of the Instructor.

Current educational trends and theories relative to physical education and the development of curricular models, with a focus on the needs of today's society.

PE 511 Survey of Literature and Research in Physical Education **3 crs.**

Prq.: A minimum of 15 credit hours in the Master of Science in Physical Education Degree program required before taking this course.

This course is designed to aid students in critiquing research and opinion in the field of physical education. Journals which contribute to the body of knowledge in physical education will be utilized. Students will be required to write articles, and select and define a research topic.

PE 512 Administration of Physical Education **3 crs.**

Prq.: 12 credits in physical education or permission of the Instructor.

Application of administrative principles to the physical education program.

PHYSICAL EDUCATION ACTIVITY COURSES

Physical Education Activity courses are offered on a quarter or semester basis for the following credit: .5 for a two hour quarter course; 1.0 credit for a three hour quarter course; 2.0 credits for a three hour semester course. A maximum six credit hours in physical education courses may be used toward graduation (this does not apply to health and physical education majors).

Archery I — Beginner

Concepts and fundamental skills of Archery including methods of aiming, scoring, and introduction to novelty events.

Archery II — Intermediate

Prq.: Archery I or comparable experience.

A follow up of Archery I with emphasis on increased skill and consistency, and an introduction to field and tournament play.

Badminton I — Beginner

Fundamental skills, rules and game concepts in order to prepare students for satisfying play experiences.

Badminton II — Intermediate

Prq.: Badminton I or comparable experience.

A follow up of Badminton I with emphasis on advanced skills, singles and doubles play, and game strategy.

Baseball/Softball

Concepts and fundamental skills of the games including rules and strategy of play.

Basketball I — Beginner

Fundamental skills of Basketball, elementary offense and defense strategies.

Basketball II — Intermediate

Prq.: Basketball I or comparable experience.

A follow up of Basketball I with emphasis on advanced strategy and game play.

Bicycle Touring

An understanding and appreciation for the sport of cycling through the application of body mechanics, cycling techniques, knowledge of multigear bikes and the many aspects of touring. Student must have a 10-speed bike.

Bowling I — Beginner

Concepts and fundamentals of bowling: approach, delivery, follow through, and strategy of play. \$3.00 per week fee, approximately.

Bowling II — Intermediate

Prq.: Bowling I or comparable experience.

A follow up of Bowling I with emphasis on increased skill and consistency. \$3.00 per week fee, approximately.

Canoeing I

Instruction in fundamental skills of canoeing, and small craft safety techniques.

Conditioning

Concepts, exercises and activities related to the development of physical fitness, including isometrics, weights and running.

Creative Modern Dance I

Problems in basic forms, movement impulse, design in movement, construction and use of musical instruments in dance. Emphasis on increased awareness, freedom and control for the individual and group.

Creative Modern Dance II

Prq.: Creative Modern Dance I or consent of Instructor.

Dance studies based on the exploration of Space-direction, line, plane, level and dimension, verbal accompaniment-prose and poetry, force-action and interaction, dance and music, leading and directing group dance.

Dance Technique

Prq.: P.E. 157 (Movement and Relaxation) or consent of Instructor.

Rhythmic exercises such as stretching, bending, swinging, twisting, falling, leaping, and jumping, sequences based on combinations of the above to increase awareness, skill and control of movement.

Folk Dance

Folk dance terminology, formations, and dance steps. Course will include insight into the background and customs of the people in the countries where the dances originated.

Square Dance Calling

This course is designed to acquaint the student with the knowledges and skills needed to call, create, and teach square dance. It includes timing and phrasing of the music, analysis of dance composition, patter and singing calls, and construction of progressions for teaching novice dancers.

Survey of Dance

Introduction to Dance as the Art of Movement. Exploration and expressive use of force, time, and space-elements common to Dance and all movement in daily activities, sports, drama and music.

Fencing I — Beginner

Concepts and fundamental skills of fencing including defense, feints, lunges, parries, reposts, and disengages.

Fencing II — Intermediate

Prq.: Fencing I or comparable experience.

A follow up of Fencing I with emphasis on compound attacks, counter parries, and strategies in bouting.

Fencing — EPEE

Introduction to the basic elements of EPEE. Utilizes the similarities and emphasizes the differences between EPEE and FOIL.

Field Hockey I

Development of basic skills, concepts and strategies for playing the game with understanding and application of rules.

Field Hockey II

A follow up of Field Hockey I with emphasis on increased proficiency of performance and game strategy.

Flag Football

Concepts and fundamental skills of the game including rules and strategy of play.

Golf I — Beginner

Concepts and fundamental skills of the game including rules and scoring. A minimal fee of approximately \$3.00 for use of facilities will be charged.

Golf II — Intermediate

Prq.: Golf I or comparable experience.

A follow up of Golf I with emphasis on increased skill and strategy of play.

Gymnastics

Concepts and fundamental skills of vaulting, balance beam, parallel bars, uneven parallel bars, high bar, side horse, rings and free exercise.

Lacrosse I

Concentration on the basic skills of the sport and on the elementary form of the game.

Lacrosse II

Refinement of lacrosse skills, further development of game strategy; optimal exposure to officiating techniques.

Movement & Relaxation I

Theories and techniques of Yoga and relaxation, and basic movement related to daily activities.

Movement & Relaxation II

A continuation and follow up of Movement and Relaxation I with more advanced exercises emphasizing Hatha Yoga and including sequences of movement, work in relaxation, breath control, balance, endurance and general coordination.

Progressive Resistance Exercises

This course will focus on the development and maintenance of physical fitness. Weight Training and Circuit Training programs will be studied, and developed.

Skiing I — Beginner

The beginner skills of Side Stepping, Kick Turn, Herringbone, Straight Running, Snowplow, Snowplow Turns, Traverse, Stem Turns, and safety aspects of the sport. Equipment is supplied. A minimal charge of approximately \$5.00 will be charged for use of off-campus facilities.

Skiing II

Continuation of Skiing I. Increased emphasis on development of practical and theoretical aspects of Skiing to enable the student to progress beyond Class C of the American teaching method. Classroom instruction on history and mechanics of Skiing.

Ski Touring

Introduction to basic skills and knowledges of Ski Touring. Instruction in choosing equipment, waxing, touring techniques and conditioning.

Soccer

Fundamental skills of Soccer, including kicking techniques, trapping, heading, offensive and defensive strategy and rules of the game.

Softball

Fundamental skills of Softball, rules and some strategy.

Senior Life Saving

Prq.: Swimming II or comparable experience.

Theory and skills of Senior Life Saving. Satisfactory completion of the course entitles students to Red Cross Senior Life Saving Certificate.

Scuba Diving

Prq.: Swimming II or comparable experience, physical examination.

The fundamentals of skin and scuba diving. Emphasis on safety using the self contained underwater breathing apparatus.

Swimming I — Beginner

Beginning swimming skills building toward proficiency in the water including crawl, elementary back stroke, and water safety.

Swimming II — Intermediate

Prq.: Swimming I or comparable experience.

Refinement of skills of Swimming I and introduction of breast stroke, back stroke, side stroke and beginning diving.

Swimming III — Advanced

Prq.: Swimming II or comparable experience.

Analysis and refinement of all swimming strokes and diving techniques and introduction of advanced skills.

Synchronized Swimming

Prq.: Swimming II or comparable experience.

Swimming and diving skills and stunts choreographed to music.

Water Polo

Includes basic movements, skill, and maneuvers of the sport of water polo with emphasis on offensive and defensive fundamentals and strategies, practical drills, rules, and regulations.

Water Safety Instructor

Prq.: Current American Red Cross Senior Life Saving Certificate.

Instruction in advanced aquatic skills and teaching methods. Students who demonstrate a high level of skill and the necessary teaching attitude will receive Red Cross Certification as Water Safety Instructor.

Tennis I — Beginner

Concepts and fundamental skills of Tennis including forehand, backhand, serve, rules and strategy of singles and doubles play.

Tennis II — Intermediate

Prq.: Tennis I or comparable experience.

A follow up of Tennis I with emphasis on volley, lob, smash, and game strategy.

Tennis III

Advanced strategies of singles and doubles play; participation in advanced competition.

Track & Field I

Fundamental skills of Track and Field including running, jumping, and throwing events.

Track & Field II

Continuation of Track and Field I. Emphasis on teaching techniques and progression of skills.

Volley Ball I — Beginner

Concepts and fundamental skills of Volleyball, team play rules and game strategy.

Volley Ball II — Intermediate

Prq.: Volleyball I or comparable experience.

A follow up of Volleyball I with emphasis on increased proficiency of performance and game strategy.

Weight Training

Emphasis will be on concepts and development of physical fitness through individualized weight training programs.

Wrestling

Fundamentals of college wrestling with emphasis on mat skills, rules, scoring and strategy.

Department of Instructional Media

Associate Professor Dr. Alan Lander, Acting Chairperson
Assistant Professor Robert Ward
Instructor Lon Fishman

The Instructional Media Department offers students the opportunity to become adept at and proficient in the use of the latest media theory, techniques, and technology in education. The Department makes available extensive resources, references, and work areas for previewing, analysis, development, and presentation of materials.

UNDERGRADUATE PROGRAM

Instructional Media Minor

IM 412, IM 452, IM 456, IM 457, IM 458, IM 460

GRADUATE PROGRAM

Master of Education in Instructional Media

This program is designed for present and future media specialists.

The following are departmental course prerequisites which may be fulfilled after admission: ED 443 or EE 450, and EE 420. Credits earned in these courses may not be counted toward the minimum of thirty-three graduate credits required for the degree.

As part of their program, students must satisfactorily complete the following curriculum:

1. Research Methods and Findings: IM 524 Seminar in Instructional Media — 3 graduate credits.
2. Humanistic and Behavioral Studies: Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. Departmental Requirements: IM 310, IM 412, IM 452, IM 456, IM 460, and IM 464 — 18 graduate credits.
4. Program Electives: Courses appropriate to the program and approved by the advisor — 6 or more graduate credits.

For additional information relative to this program, students not yet accepted should consult with the departmental chairperson.

The departmental offerings listed below include the following course which may not be used in partial fulfillment of M.Ed. degree requirements: IM 499.

COURSE OFFERINGS*

IM 310 Audiovisual Methods and Materials

3 crs.

Introduction to instructional media and technology incorporating selection, evaluation and utilization of instructional materials. Instruction in and application of still pictures, slides, filmstrips, recordings, radio, television, three-dimensional materials, field trips, flannel boards, chalk boards, specialized teaching machines and audio-visual media design and preparation. Sources of teaching aids and supplementary materials accompany laboratory procedures.

IM 311 Audiovisual Methods and Materials for Special Education

3 crs.

Same as IM 310 with guided research applicable to all areas of Special Education.

IM 412 Communication Theory

3 crs.

Prq.: IM 310.

Applies basic concepts of communications to problems of teaching and learning in today's schools. Modern techniques and applications will be thoroughly discussed.

IM 420 Advanced Audiovisual Techniques

3 crs.

Directed study course. Development of a course of study in the student's field of concentration coordinated with instructional media and technology.

IM 452 Science of Photography in Education

3 crs.

Prq.: IM 310 or IM 311 or consent of the Instructor.

Enables the student to learn and practice the basic fundamentals of photography. The basic philosophy, educational planning and techniques for the preparation of photographic materials are discussed. Emphasis is on the proper use of the camera and darkroom techniques.

IM 454 Script Writing Techniques for Radio and Television

3 crs.

Prq.: IM 310, IM 452, IM 460.

Necessary approaches and techniques peculiar to the needs of radio and television. The student will write scripts for actual production in the studio.

IM 456 Radio and TV Studio Operation and Control

3 crs.

Prq.: IM 310.

The student will learn all of the technical data necessary to direct TV programs and to operate a radio station, and be prepared to take the examination for 3rd class license.

IM 457 Advanced Photography Techniques

3 crs.

Prq.: IM 452 and consent of the Instructor.

The student will acquire and practice advanced photography skills. Techniques such as proper print finishing, print toning, preparation of black and white and color slides, use of the copy stand and the fundamentals of color printing are included. This course is recommended for only those students who have taken a basic photography course or its equivalent.

IM 458 Radio and TV Production

3 crs.

Prq.: IM 456.

Designed to make the student proficient in the production of radio and TV programming, with stress upon being able to make, obtain, and set up necessary props, background, trick camera shots, and sound effects.

IM 460 Graphics for Instructional Media

3 crs.

Prq.: IM 310 or consent of Instructor.

Instruction in graphic arts pertaining to new technology in education. Mechanical and hand lettering and lay-out. Preparation of materials by color-lift, thermofax, and technifax techniques. Basics for photocopying including 2" x 2" slides.

IM 464 Management of Non-Print Instructional Media Department

3 crs.

Prq.: Consent of Department Chairperson.

All phases of operating an Instructional Media Department; budgeting, purchasing, staffing, services, analysis of materials and equipment. Cataloguing and classification of instructional non-print materials using LC and Dewey Decimal Systems.

*See page 50 for general information regarding course offerings.

IM 466 Cinematography I

3 crs.

Prq.: IM 452

Basic film production techniques and their application in education are taught. Topics such as scripting, the motion picture camera, lighting, shooting, splicing and editing are included. Students will work with super 8mm and/or 16mm equipment and materials.

IM 499 Directed Study in Non-Print Instructional Media

1-3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

IM 502 Research

credit to be arranged.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field (i.e. Nonprint Instructional Media). For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

IM 503 Directed Study

credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field (i.e. nonprint instructional media). For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue

IM 524 Seminar in Instructional Media

credits arranged.

Prq.: IM 420, IM 452, and IM 460.

Systematic review of literature and research, techniques, and technology in nonprint instructional media. Reports for group discussion and analysis.

IM 553 School Public Relations

3 crs.

Prq.: permission of the Instructor.

The necessity for a well-informed public to foster good school public relations. All necessary media will be discussed: radio, television, newspapers, magazines, school publications, teaching-parent and administrator-teacher-parent relationships. Emphasis will be placed on communication theory.

Department of Library Science

Assistant Professors: Richard Neubauer, Adeline Oakley

The Department of Library Science provides students with practical and theoretical courses, workshops, and field experiences that will enable them to acquire the philosophy and professional competencies necessary to be a successful school or public librarian.

UNDERGRADUATE PROGRAMS

The Department offers library instruction to all undergraduate students and to those who wish to minor in library science. Acceptance of transfer credits in library science courses, applicable to Massachusetts State Certification, must be approved by the Department.

Suggested electives for students in other programs: LI 300 for classroom teachers, school administrators; LI 310 for classroom teachers, Special Education and Reading; LI 320 for Secondary English teachers; LI 370 for students wishing to upgrade their research skills.

The undergraduate minor in library science is designed for Education Majors and Secondary Education minors wishing to receive Massachusetts certification as a school librarian as well as other students who wish employment in Public Libraries.

Library Science Minor

LI 310 or LI 320, LI 370, LI 430, LI 440, LI 498

Two additional courses in Library Science (with department approval)

GRADUATE PROGRAM

Master of Education in School Librarianship

This program is designed primarily for school librarians; many of the courses, however, are of value to educators outside of the library profession.

A minimum of thirty approved graduate credits is required for this degree program. As part of their program, students must satisfactorily complete the following curriculum:

1. Research Methods and Findings: GC 500 Research and Evaluation — 3 graduate credits.
2. Humanistic and Behavioral Studies: Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. Departmental Requirements: LI 310 or 320, LI 370, LI 430, LI 440, and LI 595 — 15 graduate credits.
4. Program Electives: Courses appropriate to the degree program and approved by the advisor. At least two electives must be selected from Library Science courses offered for graduate credit only (500 level) — 6 or more graduate credits.

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.Ed. degree requirements: LI 102, LI 450, LI 498, and LI 499.

COURSE OFFERINGS*

LI 102 Library Introduction

0 crs.

New students are familiarized with the library during one quarter of their first academic year. One period a week is devoted to developing basic library skills. 1 one-hour period during one quarter.

LI 300 Library Services in the School

3 crs.

The philosophy, functions, and evaluation of the library in the school for future teachers, administrators, and librarians. Correlation of the library with the modern curriculum, the use of print and non-print materials in the library, and the mutual cooperation of administration, faculty, and students. 40 hours of observation in a variety of school and public libraries is required as part of the course.

LI 310 Children's Literature

3 crs.

Reading interests of children from pre-school years through the elementary grades with emphasis on the contribution that reading can make toward the process of growing up; criteria for evaluation and analysis of children's books; types of books available today, considered in terms of the needs, interests, and abilities of children. Topics covered are history of literature for children; illustrators; folk-tales; myths; modern fanciful tales; fiction; poetry; books in special fields, such as history, science, travel.

LI 320 Literature for Young Adults

3 crs.

Survey of literature for the adolescent, designed for junior and senior high school teachers and librarians, including a brief history of the development of this literature, evaluation of publishers, and psychology of the adolescent.

LI 370 Reference Materials and Their Use

3 crs.

Introduction to the basic reference books in all subject disciplines. Bibliographic search assignments give practical application of techniques using all the resources of the library.

LI 430 School Library Administration

3 crs.

Principles and practices in school library administration and service; the role of the library in the school's educational program; pupil instruction in library use; the planning and equipping of the library; and other aspects of library organization.

LI 440 Organization of Library Materials

3 crs.

Emphasis is on the Dewey Decimal classification and Sears Subject headings. Some time is given to the general processing of books.

LI 450 An Introduction to the Library

3 crs.

Introduces teachers, administrators, and beginning librarians to the role of the library education and the expanded services needed to meet the new methods of teaching.

LI 451 Storytelling

3 crs.

How to select from traditional and contemporary sources, to prepare, and to present stories to children and other special audiences. Opportunity is provided to work with music, puppetry, video-tape, and other media.

LI 452 Selection of Library Materials

3 crs.

Criteria and policies in selection of print and non-print material for reader interest and curriculum enrichment, with emphasis on practical applications and appraisal of bibliographic aids and current review practices.

LI 455 Film Librarianship

3 crs.

A comprehensive study of the 16 millimeter film, stressing its use in school and public libraries: brief history and development of theatrical, documentary, and experimental cinema; evaluation and criticism; resources and programming, selection, and distribution.

*See page 50 for general information regarding course offerings.

LI 464 Use and Organization of Non-print Materials

3 crs.

Prq.: Consent of the Instructor.

Survey of the standards and innovations in school media programs and exposure and proficiency in the use and organization of non-print materials currently used in libraries.

LI 498 Library Practicum (formerly LI 495)

3-15 crs.

Prq.: Consent of Department.

Experience in all phases of school or public library activities will be provided for students taking Library Science as a minor subject. The practicum will be scheduled individually in a nearby school or public library that has an experienced and trained librarian and a well established library program.

LI 499 Directed Study in Library Science

1-3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

LI 502 Research

credit to be arranged

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

LI 503 Directed Study

credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this catalogue.

LI 548 Advanced Cataloging and Classification

3 crs.

Prq.: LI 440.

Gives primary consideration to the Library of Congress classification and subject headings. Some attention to non-book materials.

LI 553 The Library as a Force in Education (formerly History of Libraries)

3 crs.

Form and function of the library as an institution in educational and social settings; classical, medieval, and scholarly libraries; the public library as the people's university; the development of school and academic libraries as a significant factor in education.

LI 555 Literature of Science and Technology

3 crs.

Prq.: LI 370.

A continuation of LI 370. Background, trends, and bibliographic control of the natural and physical sciences, including pure and applied.

LI 556 Literature of the Humanities

3 crs.

Prq.: LI 370.

A continuation of LI 370. Background, trends and bibliographic control in literature, the arts, philosophy, and religion.

LI 557 Literature of the Social Sciences

3 crs.

Prq.: LI 370.

A continuation of LI 370. Background, trends, and bibliographic control in history, political science, education, and the behavioral sciences, including organizations periodicals, and government publications.

LI 566 Systems Approach to Libraries

3 crs.

Prq.: LI 555 or permission of the Instructor.

Survey of developments in information retrieval and other library applications of modern procedures in acquisition, circulation, management, and periodical control.

LI 569 The Book Arts

3 crs.

Traces the development of the written word from the earliest alphabet to today's computerized publishing. The history, art, and science of the book include field study of book production; manuscripts, rare books and bindings; and award winning books.

LI 576 Research Problems in Library Literature

3 crs.

Prq.: Permission of the Department.

Designed for special projects for advanced students desiring individual instruction in the methods of library research.

LI 590 Seminar on School Librarianship

3 crs.

Prq.: a minimum of fifteen credit hours in Library Science and consent of the Advisor.

Intended as a culminating exercise in administrative school librarianship. It will include study and analysis of current problems and issues in elementary and secondary school library administration. Students will seek solutions to these through reading and research.

LI 595 Professional Practicum

3 or 6 crs.

Prq.: completion of, or enrollment in, all other required courses in the degree program.

Involves observation and participation in all important aspects of school library administration, including selection and organization of materials; reference and bibliographic services, and techniques of teaching library use. This course must be pursued at a school library approved by the Library Science Department at Bridgewater and may only be waived if the student has had considerable experience as a school librarian in a situation acceptable to the Department.

Department of Secondary Education

Associate Professor Robert E. Fitzgibbons, Acting Chairperson

Associate Professors: Arthur Baker, David Englund, Paul Kelley, Robert Mogilnicki

Assistant Professors: Leo McGuirk, Raymond ZuWallack

UNDERGRADUATE PROGRAM

The Department of Secondary Education provides students with the theoretical and practical knowledge necessary for becoming effective teachers in the secondary school. The curriculum includes a detailed consideration of contrasting models and strategies of teaching in the secondary school and of the psychological theories and philosophical reasons justifying their appropriateness. Theory is related to practice by means of micro-teaching, role-playing, other simulation activities and teaching in area schools. Students gain additional practical experience through tutoring students, assisting or observing teachers, and student teaching in area secondary schools.

Students preparing to teach in grades 7 through 12 pursue a program leading to the degree of Bachelor of Arts or Bachelor of Science with a minor in Secondary Education.

All students in a teacher education program must apply for admission, and be accepted in, the Teacher Education Program. Information on the Teacher Education Program may be found in the introductory section of the Division of Professional Education.

Successful completion of the Secondary Education minor enables the student to qualify for a Secondary Teaching Certificate upon graduation (given current certification requirements.)

Secondary Education Minor

ED 210, ED 211, ED 310, ED 312-326, ED 490

GRADUATE PROGRAM

Master of Arts in Teaching

The Department of Secondary Education, in conjunction with most of the academic departments of the College, offers a program leading to the degree of Master of Arts in Teaching with a concentration in an academic area. This program is described under the heading Graduate Degree Requirements — Master of Arts in Teaching in the Graduate School section of the Catalogue. For advice relative to the Master of Arts in Teaching, those not yet accepted should consult with the Chairperson of the appropriate academic department and the Chairperson of the Department of Secondary Education. The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.A.T. degree requirements: ED 210, ED 211, ED 490, and ED 499.

COURSE OFFERINGS*

ED 210 Models of Teaching in the Secondary School

3 crs.

Study of different models of teaching such as the behavioral, information processing, humanistic, etc. Developing competencies in these models is stressed through microteaching and other simulations. Emphasis is also placed on understanding the contemporary secondary school, e.g. historical development, various organizational structures, curricula, teacher roles, etc. Students gain attendant, meaningful experiences through observing, tutoring or assisting in area secondary schools.

ED 211 Educational Psychology

3 crs.

An introduction to the psychological theories underlying different models of teaching. Focus is on the adolescent particularly how he/she learns and the significant factors affecting social, emotional and cognitive growth. Theory is related to practice through simulations and field work in area secondary schools.

ED 310 Aims and Philosophy of Secondary Education

3 crs.

The aims of secondary education, its curriculum, structure and teaching strategies are examined using the concepts and methodologies of philosophy. Emphasis is on developing the student's ability to think clearly and to make rational educational decisions. The philosophical presuppositions of different models of teaching are related to practice through simulations and field work in area secondary schools. Field experience is balanced to include analytic observation and teaching based on clearly articulated theoretical foundations. (This course may not be taken for credit by students who have satisfactorily completed ED 480.)

ED 312-326 Strategies for Teaching in the Secondary School

3 crs.

Strategies, including methods, materials and media, for teaching particular disciplines are studied. Developing competency and versatility is stressed through simulations and guided teaching in area secondary schools. Other topics considered are classroom management and organization, evaluation and accommodating individual differences. A student registers for the course appropriate to his/her major according to the following schedule:

| | |
|-------------------------|---------------------------|
| ED 312 Social Studies | ED 320 Biology |
| ED 314 English | ED 322 Mathematics |
| ED 316 Earth Science | ED 324 Foreign Language |
| ED 317 Geography | ED 325 Art |
| ED 319 Physical Science | ED 326 Speech and Theatre |

ED 380 Contemporary Issues in Education

3 crs.

The identification and analysis of fundamental issues currently facing the American educator. The goal is to understand the source of the problems and to evaluate suggestion solutions.

ED 382 Comparative Education

3 crs.

Representative educational patterns from Asia, Africa, Europe, North and South America and their relationship to social institutions and problems.

ED 383 International Education

3 crs.

An introduction to the role of education in the interaction of the peoples and cultures of various nations. Activities of such entities as OAS, UNESCO, OECD, etc., engaged in fostering international exchange of education concepts, leaders and programs will be reviewed. Major contemporary trends and international issues in education will be identified and analyzed.

ED 384 Canadian Education Seminar

3 crs.

The Seminar will provide the opportunity for students to explore the political, economic, ethnic, social, and cultural complexities of education in Canada. Particular emphasis will be placed on the problem of the reconciliation of National and Provincial goals. One field-trip per semester will be an integral part of the inquiry. Each student will be expected to bear the cost of his/her own expenses for the field-trip.

ED 440 Methods and Materials in Secondary Education

3 crs.

Prq.: ED 211.

Emphasis is on the analysis of teaching in the modern secondary school. Topics will include: the learning process; establishing objectives; classroom organization and management; meeting individual differences; evaluation;

*See page 50 for general information regarding course offerings.

Department of Secondary Education

correlation between subject matter fields; and recent developments in methodology and subject matter. Primarily for those interested in gaining certification, undergraduates with no teaching experience, and teachers who have been away from the classroom for many years.

ED 443 Secondary School Curriculum

3 crs.

Purposes of the modern secondary school and the curriculum needed to implement them; historical origins, modern development, and future possibilities. Stress is laid on the manner in which the curriculum is built, behavioral objectives, resource centers, assisting in curriculum construction, and methods of curriculum evaluation.

ED 480 Philosophy of Education

3 crs.

Thinking critically and imaginatively about education from the viewpoint of philosophy. Emphasis is placed on understanding the philosophical presuppositions underlying educational practices and policies.

ED 485 History of Educational Thought

3 crs.

Research and evaluation of the theories of education from which present educational practices, policies, and theories have developed.

ED 487 History of American Education

3 crs.

An examination of the development of education in America from colonial times up to the present with a consideration of probable future directions.

ED 490 Supervised Teaching in the Public Schools — Secondary

6 crs.

PqPrq.: Acceptance and Good Standing in Teacher Preparation Program.

Graduate students must first complete 24 graduate credits of approved degree work or obtain permission from the Director of the Division of Professional Education.

Students are assigned to appropriate student teaching stations where they work in an approved situation under an experienced supervising teacher. This is a practical experience for one quarter in a public school where student teachers are functioning as professional teachers. A college supervisor visits to assist the student teacher. Seminars may be held to exchange experiences. Students are expected to carry a minimum responsible teaching load equal to 50% of the regular classroom teacher's assignment. Full time for one quarter.

ED 499 Directed Study in Secondary Education

3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

ED 505 Historical Foundations of Education

3 crs.

Prq.: ED 480.

Historical persons, events and movements which have built man's educational establishment from antiquity to current developments in the American school scene.

ED 520 Psychological Foundations of Education

3 crs.

Prq.: PY 100 and one of the following: PY 224, PY 226, PY 252, ED 211.

A systematic exploration of the various psychological principles related to teaching and application of these principles in specific classroom situations. Special emphasis on social psychology, dynamics in interpersonal relationships and group processes, motivation, and discipline theory.

ED 523 Directed Study in Educational Psychology

credit to be arranged.

Prq.: Acceptance in a master's degree program at Bridgewater State College and completion of at least 15 graduate credits approved by the student's advisor.

Directed study in the field of educational psychology. Designed for individuals who desire to study selected topics in this field. Variable credit, and repetitive up to a total of 4 credits for an M.A.T. Grades will be given. Students who wish to enroll in Directed Study should obtain the form Request for Directed Study at the Graduate School Office well in advance of registration. The completed form should be filed with the Division of Continuing Education at the time of registration.

ED 580 Philosophical Foundations of Education

3 crs.

Prq.: ED 480.

A critical and intensive analysis of selected concepts and beliefs which function as the basis of recent philosophies

of education and their relation to current educational practices and policies. Readings from recent philosophers of education.

ED 583 Directed Study in the Philosophy of Education **credit to be arranged.**

Prq.: Acceptance in a master's degree program at Bridgewater State College and completion of at least 15 graduate credits approved by the student's advisor.

Directed study in the field of philosophy of education. Designed for individuals who desire to study selected topics in this field. Variable credit, and repetitive up to a total of 4 credits for an M.A.T. Grades will be given. Students who wish to enroll in Directed Study should obtain the form Request for Directed Study at the Graduate School Office well in advance of registration. The completed form should be filed with the Division of Continuing Education at the time of registration.

ED 590 Sociological Foundations of Education **3 crs.**

Prq.: SO 202 or permission of the Instructor.

A critical examination of the effects of various social institutions, groups, and situations on educational policy and content.

ED 591 Research in the Classroom Teaching of Language Arts **3 crs.**

Designed to introduce the student to the fundamentals of educational research methodology and to develop an understanding of current research findings in the area of Language Arts. Achievement of these goals to be demonstrated by the completion of a research project in the student's area of interest.

ED 592 Research in the Classroom Teaching of Social Science **3 crs.**

Designed to introduce the student to the fundamentals of educational research methodology and to develop an understanding of current research findings in the area of Social Sciences. Achievement of these goals to be demonstrated by the completion of a research project in the student's area of interest.

ED 593 Research in the Classroom Teaching of Mathematics **3 crs.**

Designed to introduce the student to the fundamentals of educational research methodology and to develop an understanding of current research findings in the area of Mathematics. Achievement of these goals to be demonstrated by the completion of a research project in the student's area of interest.

ED 594 Research in the Classroom Teaching of Science **3 crs.**

Designed to introduce the student to the fundamentals of educational research methodology and to develop an understanding of current research findings in the area of Science. Achievement of these goals to be demonstrated by the completion of a research project in the student's area of interest.

ED 595 Research in the Teaching of Reading **3 credits**

Prq.: EE 420 and EE 540.

This course is designed to provide students with a thorough introduction to research methodology: formulation of problems and hypotheses, research design, data-gathering instruments, analysis, and the writing of research reports. Students will apply these skills in the evaluation of research in the field of reading and in the completion of a research paper related to the teaching of reading.

Division of Professional Education Graduate Programs In: Guidance School Administration

MASTER OF EDUCATION IN GUIDANCE

Guidance and Counseling Committee

Assistant Professors: H. Fanning, M. Jones (Committee Coordinator),

McGuirk, Worden, ZuWallack

Staff: Gaines, Plotner, Veno

The Master of Education in Guidance is designed to train students to function effectively as counselors in public and private educational institutions and community agencies.

The Committee subscribes to the general policies of admissions as outlined by the Graduate School. In addition, in the case of certain applicants, a personal interview may be required. Full-time students who commence their study during the spring or summer semesters should be able to complete requirements within one full academic year. While a teaching certificate is not required, candidates seeking education-related positions are strongly urged to consider obtaining appropriate certification credentials.

A minimum of thirty-six approved graduate credits is required in this degree program. As part of their program, students must satisfactorily complete, with the approval of their advisor, the following curriculum:

1. Research Methods and Findings: GC 500 Research and Evaluation — The research topic selected must relate to the degree program, or additional research — based study through GC 502/GC 503 will be required — 3 graduate credits.
2. Humanistic and Behavioral Studies: Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. Departmental requirements: SA 560 The American Public School Today (Students with appropriate experiential backgrounds or non-educational professional goals may, with the consent of the advisor, be exempt from this course.) SE 430, GC 530, GC 532, GC 533, and either GC 536 or GC 539 — 18 graduate credits.
4. Program Electives: Courses appropriate to the degree program and the personal/professional goals of the individual student. Degree candidates are encouraged to consider the wide range of courses offered outside of the program by other departments — 9 or more graduate credits.

Students not yet accepted are urged to confine their selection of courses to curriculum areas other than program electives. Specific assistance may be obtained from the Committee Coordinator.

Comprehensive examinations will be administered on November 4, 1976 and April 5, 1977. The examination may not be taken prior to the last term of course work. The examination is comprehensive in nature requiring a solid understanding of and a high level of competency in the areas emphasized by the Guidance and Counseling Program. Previous examinations are on reserve at the Main Desk at the Maxwell Library.

COURSE OFFERINGS*

SE 430 Principles and Practices in Guidance

3 crs.

See listing under Department of Educational Services.

GC 500 Research and Evaluation

3 crs.

Prq.: EE 420, completion of an examination in the area of measurement, or permission of the Instructor.

The completion of a term research study is the main objective of this course which is designed to serve the beginning graduate student. To that end, it will stress the nature of, and criteria for, evaluating research. The necessary library techniques and resources for selecting and delimiting problems, appraisal of related research literature and documentation, organization and format of a research study will be explored in depth. Concepts in descriptive statistics will also be reviewed.

GC 502 Research

3 crs.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

GC 503 Directed Study

3 crs.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

GC 522 Measurement of Intelligence: Stanford-Binet

3 crs.

Prq.: PY 100 and EE 420.

Training for administration, scoring and interpretation of the Stanford-Binet Intelligence Scale. A test kit is necessary.

GC 524 Measurement of Intelligence: WAIS, WISC-R, and WPPSI

3 crs.

Prq.: PY 100 and EE 420.

Training for administration, scoring and interpretation of the Wechsler Intelligence Scales. Test kits are necessary.

GC 525 Measurement of Psycholinguistic Abilities: Illinois Test of Psycholinguistic Abilities (ITPA)

3 crs.

Prq.: PY 100 and EE 420.

Training for the administration, scoring and interpretation of the Illinois Test of Psycholinguistic Abilities. A test kit is necessary.

GC 530 Counseling Theory and Practice

3 crs.

Prq.: SE 430.

Principles of counseling and the application of the basic techniques to the counseling process with particular emphasis on the counseling interview. Case studies will be used and current issues and situational problems discussed from both school and non-school perspectives.

*See page 50 for general information regarding course offerings.

GC 531 Organization and Administration of Guidance Programs

3 crs.

Prq.: SE 430.

Procedures for creating and operating a program of guidance services in both school and non-school settings including basic organizational procedures and patterns, and administrative relationships, in guidance programs.

GC 532 Practicum in Guidance and Counseling

3 crs.

Prq.: SE 430, GC 530, GC 533, and GC 536 or GC 539.

A supervised counseling experience extending approximately one semester. Students participating in the practicum will be placed according to their area of concentration in an appropriate school or community agency. Students must register with the Committee Coordinator by May 15 for the fall semester practicum and by October 15 for the spring semester practicum. Only those admitted to the M.Ed. in Guidance program may participate.

GC 533 Psychological Measurement: Group Procedures

3 crs.

Prq.: EE 420 and SE 430.

Introduction of the counselor to the basic principles of group psychological testing and the most commonly used instruments for assessing intelligence, achievement, aptitude, interest, and personality. Emphasis will be placed on test score interpretation in counseling.

GC 536 Elementary School Guidance

3 crs.

Prq.: SE 430.

The psychological, sociological and educational deficiencies which contribute to pupil problems in the elementary school. Emphasis on the philosophy of pupil personnel services, child study techniques, play therapy, parent and teacher consultation, home visitations, and identification of child guidance agencies and their functions.

GC 537 Seminar in Counseling

3 crs.

Prq.: GC 530 or permission of the Instructor.

Workshop format course designed to help the student reach a greater understanding of himself as a counselor. Provides an in-depth exploration into a variety of approaches to counseling. Original reading from a number of theorists is required.

GC 538 Theory and Process of Group Interaction

3 crs.

Prq.: GC 530.

An examination of the theories and processes of group dynamics and their relationship to counseling philosophy. Special emphasis will be placed on the synthesis of leadership, membership, and purpose, as well as the evaluation of the appropriateness of various group counseling applications.

GC 539 Occupational Information and Placement

3 crs.

Prq.: SE 430.

The use of occupational and educational information and techniques of placement for long-range career planning is considered. Emphasis is placed on the process of decision-making and theories of vocational choice.

NOTE: Students seeking certification as school counselors or guidance directors are reminded that it is their responsibility to develop a program which parallels state certification requirements.

MASTER OF EDUCATION IN SCHOOL ADMINISTRATION

School Administration Committee

Professors: Adamson, Harper

Associate professors: Baker (Committee Coordinator), Kelley

Assistant Professors: J. Jones, Ronning, Wolpert

Staff: Meaney, Sharples, Walsh

This program is designed to prepare students for the following positions in school administration:

Superintendent
Curriculum Director, Supervisor, or Director of Instructional Resources
Business Manager
Director of Pupil Personnel Services
Elementary School Principal
Middle School Principal
Secondary School Principal
Department Chairperson
Director of Health and Physical Education
Director of Student Activities

A minimum of thirty-six approved graduate credits is required in this degree program. (It should be understood that those who anticipate preparing for some of the above positions, such as superintendent, should plan to do graduate work beyond the master's degree.)

As part of their program, students must satisfactorily complete the following curriculum:

1. Research Methods and Findings: GC 500 Research and Evaluation — 3 graduate credits.
2. Humanistic and Behavioral Studies: Consult Graduate Degree Requirements — Master of Education in the Graduate School section of this catalogue — 6 graduate credits.
3. Departmental Requirements: SA 510 Seminar on Educational Leadership for the Future (prior to admission), SA 560 The American Public School Today, and SA 568 Seminar in Problems of School Administration — 9 graduate credits.
4. Program Electives: Courses appropriate to the degree program and approved by the advisor — 18 or more graduate credits.

For additional information relative to this program, students not yet accepted should consult with the Committee Coordinator of the program.

Prior to acceptance, the applicant must obtain from the Graduate School a school administration questionnaire which should be completed and submitted as part of the application. Applicants are required to enroll in SA 510 Seminar on Educational Leadership for the Future (SELF) prior to any review of their application material.

Only those who have completed one year of successful full-time teaching in an accredited school will be considered for admission to this program. Applicants must file the form Certificate of Teaching. Applicants who plan to prepare for administrative positions at the elementary level, and those who plan to prepare for administrative positions at the secondary school level must have fulfilled the teaching requirement at the appropriate level.

COURSE OFFERINGS*

SA 502 Research

3 crs.

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

SA 503 Directed Study

3 crs.

Prq.: Approval of the Advisor:

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

SA 510 Seminar on Educational Leadership for the Future

3 crs.

Designed to provide for individual self-appraisal, institutional assessment, and professional development planning. Offered as a series of six bi-weekly sessions using Friday evenings and Saturday mornings. Provides information on educational leadership and management concepts, situations, problems; provides an introduction to faculty and program; offers counseling assistance for career planning.

SA 559 Administration of Community Education Program

3 crs.

Prq.: SA 560.

Development of an understanding of how administrators can develop a successful education process in their neighborhood through community involvement and maximum facility planning.

SA 560 The American Public School Today

3 crs.

Prq.: ED 380, or ED 382, or ED 480, or permission of the Instructor.

A survey of the principles of school organization and administration: program, pupil services, personnel, plant and equipment, and public relations. Emphasis is on common practice, issues and trends. Experience in staff participation through the use of the administrative process in class work and projects both individual and group. A core course for all M.Ed. programs and a prerequisite for courses in school administration.

SA 561 Elementary School Administration

3 crs.

Prq.: EE 450 and SA 560.

The application of the general principles of school administration to the specific problems of the elementary school. Emphasis on the areas of elementary program, plant services, pupil control and accounting, personnel and public relations.

SA 562 Secondary School Administration

3 crs.

Prq.: ED 443 and SA 560.

The application of the general principles of school administration to the specific problems of the secondary school. Emphasis on the areas of secondary program, pupil administration, plant and facilities, personnel and public relations.

SA 563 Personnel Administration in Public Schools

3 crs.

Prq.: SA 560.

The nature, development, and importance of personnel administration and the general principles, preparation and procedures for its implementation. Special topics will include selection, orientation, assignment, supervision, rating and the establishment of the type of morale essential for the most effective teaching-learning atmosphere.

SA 564 Public School Supervision

3 crs.

Prq.: SA 560.

The philosophy and function of supervision and the roles of the various staff members responsible for supervision in a modern public school.

SA 565 School Finance and Business Administration

3 crs.

Prq.: SA 560.

The financial support for public schools from local, state, and federal governments. School budgets, accounting, and purchasing procedures, distribution of supplies and services, transportation, food service, management and maintenance of the school plant.

*See page 50 for general information regarding course offerings.

SA 566 School Plant Planning and Administration 3 crs.

Prq.: SA 560.

For the specialist in school administration who may ultimately go on to school district administration as an assistant superintendent, business manager, director of buildings and grounds or superintendent. In-depth coordination of the many factors involved in planning, construction, maintaining and administering the modern school plant.

SA 567 Administration of the School Activity Program 3 crs.

Prq.: ED 210 or ED 443, or SA 560.

The nature and function of student activities, the management of the activity program (with an administrative emphasis) and an analysis of the types of student activities.

SA 568 Seminar in Problems of School Administration 3 crs.

Prq.: Twenty-four (24) credit hours must be completed toward the Master's Degree in School Administration including five other Administration courses.

Study and analysis of current problems and issues in elementary and secondary school administration. Class members are to purchase appropriate class material.

A 569 Legal Aspects of School Administration 3 crs.

Prq.: SA 560.

Legal rights, duties and liabilities of school personnel in general relationship to the school committee in Massachusetts. Intended for administrators, prospective administrators, and classroom teachers interested in the legal aspects of school committees, school property, teaching contracts, tenure, prevention of injury and accidents to students, relationships with parents, and a general survey of educational law cases at the local, state, and national level.

SA 570 Federal Assistance to American Education 3 crs.

Prq.: SA 560.

The goals, content, federal priorities, and evaluation of federal-aid-to-education programs will be studied with particular emphasis on implications to schoolmen. Various titles of the Elementary and Secondary Education Act of 1965 and its subsequent revisions and amendments.

SA 571 Introduction to Theory and Understanding of Group Interaction 3 crs.

Prq.: SA 560.

Directed to teachers and administrators who wish to be more effective in working with groups. Consideration will be given to the group process and staff development with emphasis on the human relations aspects of interpersonal relationships. Group activities will be based upon improving understanding and utilization of skills in such areas as communication, cooperation, problem-solving, conflict management and decision-making.

SA 572 Curriculum Development in Secondary School Administration 3 crs.

Prq.: ED 433, EE 450 or equivalent.

The nature of the Secondary School Curriculum (Middle School, Junior High School, Senior High School) with an emphasis on the role played by the Administrator in terms of organization and implementation. Specific consideration will be given to administrative participation in curriculum development, the initiation and implementation of curricular changes, administrative curriculum, in-service training and evaluation of curriculum.

SA 573 Innovative Administration Practices in Modern Education 3 crs.

Prq.: SA 560.

A study in depth of six or more topics that have current impact on school organization and administration. The innovations studied, selected in part by the class itself, vary from year to year, and might include such areas as Accountability, Cultural Pluralism, Differentiated Staffing, Futurism, Negotiations, Open Campus, Open Education PPBS or Rescheduled School Year.

SA 574 Organization and Administration of the Middle School 3 crs.

Prq.: SA 560.

The application of the general principles of school administration to the specific problems of the Middle School, grades five through eight. Emphasis on the areas of Middle School program, pupil administration, plant and facilities, personnel, and public relations.

SA 575 Administration of Occupational and Vocational Education

3 crs.

Prq.: SA 560.

A survey of the principles and possible organizational structures of the Occupational and Vocational Education segment of the public school community with specific emphasis on such concepts as Federal and State legislation and financial participation by various governmental agencies, budgetary problems, regionalization, curricular trends, articulation with participating school segments, public relations and work selection integration between the school and communities.

SA 576 Internship in School Administration

3 to 6 crs.

Prq.: SA 560.

Assumption of administrative responsibility in an actual school situation under the supervision of administration from the school concerned, and staff members from the college.

SA 577 Educational Planning

3 crs.

Prq.: SA 560.

Familiarization with the processes for translating national, state, or local policy in education into an operable organizational plan. Development of schemata for evaluating existing systems and for the planning of educational innovation and reform, orientation of situational factors involved in the development and presentation of alternative choices in the conduct of educational systems. Actual case studies including some in Chile, Spain, Jordan, and Korea will form the basis for class activity.

SA 578 Curriculum Improvement

3 crs.

Prq.: EE 450, or ED 443, or permission of Instructor.

Principles of curriculum improvement will be developed through the critical analysis of practices found in public schools.

Division of Social Sciences

Economics,
History,
Political Science

Divisional Director: Professor Jordan O. Fiore

The Division of Social Sciences offers majors in history and political science. There is no major in economics but majors in history and political science are encouraged to select courses in economics to enrich their programs in the area of the Social Sciences.

Students majoring in political science who plan to teach may combine electives in history and education and thus obtain certification in history and the Social Sciences. There are also interdisciplinary programs with majors in the Behavioral Sciences which make it possible for majors in these areas who take appropriate courses in history and education to obtain certification in the Social Sciences. The Division of Social Sciences offers service courses in history, political science, and economics for all undergraduate students and provides electives to fulfill distribution requirements in the Social Sciences. In addition, other Social Science courses in geography are listed under the Department of Earth Sciences and Geography.

At the graduate level the Master of Arts degree is offered in the field of history. The degree of Master of Arts in Teaching is offered in history and social sciences. The Division of Social Sciences also takes part in an interdivisional program with the Division of Behavioral Sciences which assists students in the M.A.T. behavioral sciences program to become certified in social studies.

Department of Economics

Professor Donald Keay, Acting Chairperson
Assistant Professor Stanley Antoniotti

UNDERGRADUATE PROGRAM

The department offers the courses listed below for undergraduate majoring in other areas who wish to include economics electives in their program.

GRADUATE PROGRAM

The Department of Economics does not offer a program at the master's degree level. Economics courses may be taken, with faculty advisor approval, in a program leading to the degree of Master of Arts in Teaching with a concentration in social sciences. Additional information regarding this degree may be found in the Graduate School section of this catalogue as well as under the Division of Social Sciences.

The departmental offerings listed below include the following courses which may not be used in partial fulfillment of M.A.T. degree requirements: EC 200, EC 499, AC 240-241.

COURSE OFFERINGS*

ECONOMICS

EC 200 Economic Principles and Problems 3 crs.

A discussion of the basic principles of micro and macro economics. Emphasis is placed on the application of theory to solving the problems of the free enterprise system.

EC 320 Comparative Economic Systems 3 crs.

A study of philosophical and structural foundations of capitalism and democratic socialism. Emphasis is placed on a comparison of the American economy to the economics of England, France, Germany, Sweden, and Japan.

EC 420 Principles of Investment 3 crs.

Introduction to the mechanics of the stock market and analysis of investment techniques for individual portfolios.

EC 499 Directed Study in Economics 1-3 crs.

Prq.: Consent of the Department.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

EC 502 Research credit to be arranged.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

EC 503 Directed Study credit to be arranged.

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

ACCOUNTING

AC 240 Accounting I 3 crs.

Prq.:

Preparation of accounting statements; cash receivables, liabilities and inventory valuation; corporate financial reporting.

AC 241 Accounting II 3 crs.

Investments, fund and cash flow analysis, budgetary control, introduction to cost accounting.

*See page 50 for general information regarding course offerings.

Department of History

Assistant Professor John F. Myers, Chairperson
Professors: William Cole, Jr., Gerald Doiron, Jordan Fiore,
Jane Herrick, Donald Keay, Dennis Lythgoe, Benjamin Spence
Associate Professors: Duane Christensen, Lucille O'Connell, Arthur Oien,
Philip Silvia, Jr., Alfred Wolff, Jr.
Assistant Professors: David Culver, Chester Nowak, Jean Stonehouse,
Thomas Turner, Dong-Jae Yim

UNDERGRADUATE PROGRAM

Bachelor of Arts

The objectives of the department are to contribute to the general education program by offering history courses to all students; to prepare students planning to teach history and to offer advanced courses to those majoring in the elementary curriculum to enable them to enrich their teaching at that level; to enable students to do graduate or associated work in the field of history.

The department recommends that its majors select a minor or interdisciplinary program which will complement the major program. History majors electing a minor in Secondary Education are strongly urged to take elective courses in geography, political science, economics and the behavioral sciences in order to meet present employment expectations.

Only 6 hours of 100 level courses may be applied toward a history major or minor.

History Major:

Any two 100 level courses in sequence (If HI 123-124 are elected, an additional course in the period before 1500 must be taken.);

HI 221-222, plus 9 additional credits in U.S. history; 9 credits in non-U.S. history; 6 additional credits from any area;

All majors must select one of the several senior seminars offered.

Successful completion of a one year sequence in foreign language at the intermediate level, or its equivalent.

History Minor:

18 hours including the freshmen and sophomore sequences.

GRADUATE PROGRAMS

Master of Arts

The Department of History offers a program leading to the degree of Master of Arts in History, which is designed to prepare qualified students for research, further graduate study and teaching. An undergraduate major in history, or its equivalent, is normally required for admission to this program.

In addition to meeting general degree requirements, the student must complete courses appropriate to his degree program and approved by the advisor.

Applicants must have an interview with the Chairperson of the Department. No application will be considered unless this requirement has been met.

In the Master of Arts program the student should elect as one of his first courses HI 501 Historical Methodology, unless his advisor agrees that he has met the requirements in an appropriate undergraduate course. All Master of Arts candidates must complete a thesis. Any student who does not complete his thesis in two semesters must continue to elect HI 502 Research each semester until the thesis is completed. The Master of Arts candidate should also display a reading proficiency in one foreign language.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.A. degree requirements: all courses numbered in the 100 and 200 levels, and HI 499.

Master of Arts in Teaching

The Department also offers a program leading to the degree of Master of Arts in Teaching with a concentration in history. This program is designed for teachers and future teachers of history and social science. It also prepares students for further graduate work in history.

In addition to meeting general degree requirements, the student must complete the departmental concentration requirement by electing courses appropriate to his degree program.

Additional information regarding this degree may be found in the Graduate School Section of this catalogue.

In both the Master of Arts and the Master of Arts in Teaching programs the candidate must elect at least two courses in non-United States History.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.A.T. degree requirements: all courses numbered in the 100 and 200 levels, and HI 499.

COURSE OFFERINGS*

Those taking upper level courses in non-U.S. History must have completed 3 hours in either Western Civilization or World Civilization. Those taking upper level courses in U.S. History must have completed either HI 221 or HI 222. Exceptions to these requirements are made by the Department.

HI 111 Western Civilization to 1715 3 crs.

A historical survey of developments which have molded our culture from ancient times to the establishment of absolutism.

HI 112 Western Civilization since 1715 3 crs.

Continuation of the survey begun in HI 111 down to contemporary times.

HI 121 World Civilization I: Ancient 3 crs.

Prehistoric man and the various ancient civilizations to the decline of the Roman Empire in the West: Ancient Near East; Classical Greece and Rome; Far East; and the Western Hemisphere.

HI 122 World Civilization II: Medieval 3 crs.

From the decline of the Roman Empire to the beginning of the Renaissance: Western Christian Civilization; Byzantine culture; Islam; other African and Asiatic peoples.

HI 123 World Civilization III: Early Modern 3 crs.

From the Renaissance to the end of the Napoleonic Era: the rise of national states; the mutual impact of East and West.

HI 124 World Civilization IV: Modern 3 crs.

From 1815 to the present: the zenith of European power and nation-building in Asia, Africa, and Latin America.

HI 221 United States History and Constitutions to 1865 3 crs.

Development of the nation from the age of exploration to the end of the Civil War.

HI 222 United States History since 1865 3 crs.

Continues the study begun in HI 221 down to the present.

HI 301 The Ancient World: Near East 3 crs.

From prehistoric times through the Persian Empire.

HI 304 History of the Middle East 3 crs.

From Mohammed to the present: The Arab Empire, the Ottoman Empire, and the roots of the Arab-Israeli dilemma.

HI 315 Nineteenth Century Europe 3 crs.

From the Napoleonic era to the eve of the First World War.

HI 316 Twentieth Century Europe 3 crs.

Particular focus on background, development, and effects of the two world wars.

HI 317 British History since 1603 3 crs.

England and her empire to 1815 with stress on parallel developments in American history, including economic and social factors.

HI 318 British Empire and Commonwealth since 1815 3 crs.

Political development to the present with emphasis on the rise and fall of the Second Empire.

HI 321 Topics in Recent American History 3 crs.

The isolationism and boom of the 1920's, the New Deal, World War Two, and the postwar period.

*See page 50 for general information regarding course offerings.

- HI 325 American Labor History** 3 crs.
The pre-industry and industrial periods. Emphasis on the reciprocal relationships of workingmen, Negroes, immigrants, and urbanization and industrialization.
- HI 326 The American West** 3 crs.
The westward movement, emphasizing the distinctive character of that region in its economic, social, political, and intellectual life.
- HI 327 The American South** 3 crs.
Sectionalism; its causes and consequences; factors which made the South distinctive; emphasis on race relations, the Civil War and Reconstruction, agrarianism, industrialization.
- HI 333 Spanish America: the Colonial Period** 3 crs.
Indigenous peoples of the area; exploration and conquest; institutional development of the empire to the revolts against Spain in the nineteenth century.
- HI 334 Spanish America: the National Period** 3 crs.
Prq.: HI 333.
From the revolutions against Spain to the present. Concentration on Mexico and two or three other states.
- HI 335 Canadian History to Confederation** 3 crs.
The land, the native peoples, exploration, patterns of settlement of the French through the Conquest to the development of English institutions.
- HI 336 Canadian History since Confederation** 3 crs.
The evolution of an independent Canada from the time of the Confederation.
- HI 343 Ancient Greece and the Hellenistic Age** 3 crs.
A historical survey of Ancient Greece and a comprehensive study of the cultural contributions of the Greeks to Western Civilization.
- HI 344 The Ancient World: Rome** 3 crs.
From its beginnings to the barbarian invasions.
- HI 353 Historiography** 3 crs.
Prq.: Consent of the department chairperson and the instructor.
Writings of major historians; evaluation through professional journals and book reviews. Enrollment limited to fifteen. Students are expected to elect HI 354.
- HI 354 Study and Writing of History** 3 crs.
Prq.: Consent of the Instructor.
The techniques of historical research and preparation of papers requiring such techniques. Analysis and evaluation of source materials will be stressed.
- HI 360 History of China** 3 crs.
From prehistoric times to the present with particular emphasis on intellectual and cultural development.
- HI 361 History of Japan** 3 crs.
From prehistoric times to the present with an emphasis on the development of social, political and economic institutions.
- HI 368 American Political History** 3 crs.
American History in political perspective: special emphasis on parties, primaries, campaigns, elections; the Presidency; personality in politics; machine politics; political institutions; corruption from U.S. Grant to Watergate.
- HI 400 Topics in Non-U.S. History** 2 crs.
Meets 4 hours weekly for one quarter. Varied topics such as Ancient Greece, World War II, Central and Eastern Europe, Brazil, South Asia.

- HI 413 Contemporary Affairs** 3 crs.
National and international problems, using magazines, newspapers, telecasts, and recent books. Political, economics, social, and scientific developments.
- HI 415 Modern Russia to 1917** 3 crs.
Political, social, and economic factors in the history of Russia from the end of the fifteenth century to the Revolution will be considered.
- HI 416 History of the U.S.S.R.** 3 crs.
The political, social, intellectual, and diplomatic development of Russia will be considered.
- HI 419 Intellectual History of Modern Europe** 3 crs.
From the Renaissance to the present.
- HI 421 History of Massachusetts** 3 crs.
From the days of the Pilgrims and Puritans to the present. In the modern period, emphasis is on social, economic and constitutional history.
- HI 423 Social and Intellectual History of the U.S. to 1870** 3 crs.
Economic, social, and cultural development to the end of the Civil War.
- HI 425 Social and Intellectual History of the United States to 1914** 4.5 crs.
The economic, social, and cultural development to the eve of the First World War, with emphasis on the transformation from an agricultural to an industrial society. 3 periods weekly for one and one-half semesters.
- HI 426 History of the American City** 3 crs.
Political, architectural, economic, social, cultural, and population factors in the growth and development of American cities since colonial times.
- HI 427 American Immigration History** 3 crs.
Patterns of migration to the United States with particular emphasis on the nineteenth and twentieth centuries.
- HI 428 American Economic History** 3 crs.
Economic development of the United States with particular emphasis on the period of industrial development.
- HI 430 Europe in the Middle Ages** 3 crs.
From the fall of Rome to the Renaissance.
- HI 432 Modern European Imperialism** 3 crs.
Africa and Asia considered as contrasting phases of European expansion in the nineteenth and twentieth centuries.
- HI 433 Africa since 1800** 3 crs.
The impact of Islamic and European cultures on the peoples of Africa; creation of colonial empires.
- HI 434 The French Revolution and the Napoleonic Era** 3 crs.
France from the Old Regime to the end of the First Empire.
- HI 435 History of Canadian-American Relations** 3 crs.
An analysis of the Canadian efforts to remain friendly with the giant to the south while protecting its political, economic and cultural integrity.
- HI 436 The Renaissance and the Reformation** 3 crs.
Western Europe from the decline of feudal institutions to the emergence of the modern state system, with emphasis on cultural and intellectual affairs.
- HI 437 Modern France** 3 crs.
From the Revolution to 1789 to the present.

- HI 438 The Age of Absolutism** 3 crs.
A history of Europe from the end of the Thirty Years' War to the French Revolution with emphasis on the political, social, scientific, religious, literary, and artistic achievements during the period.
- HI 440 Topics in U.S. History** 2 crs.
Varied topics such as Women; Indians; French in New England; History of Boston. Meets 4 hours weekly for one quarter.
- HI 441 American Negro History** 3 crs.
From the colonial period through the present.
- HI 452 Senior Seminar in History** 3 crs.
Prq.: Consent of the department chairman and the instructor.
Each senior will elect a seminar in United States, European, or Latin American history. The number of students in each is limited. 2 periods weekly.
- HI 457 Historical Museum Management** 2 crs.
4 periods weekly for one quarter.
- HI 476 American Social and Intellectual History, 1914 to the Present** 3 crs.
Economic, social, and cultural developments since 1914, with emphasis on the transformation of American life through such forces as technology, population trends, and the mass-production and mass-consumption economy.
- HI 478 Constitutional History of the United States** 3 crs.
Historical development of the U.S. Constitution.
- HI 481 United States Foreign Relations to 1900** 3 crs.
From the American Revolution to 1900.
- HI 482 United States Foreign Relations since 1900** 3 crs.
- HI 483 United States History: Progressive Era** 3 crs.
The rise of the Progressive movement in American history to the early 1920's as reflected in politics, government, and the social and intellectual life of the era.
- HI 484 United States History From World War I** 3 crs.
Development of the modern America through the isolationism and boom of the 1920's, the Great Depression, the New Deal, World War II, and the role of the United States in the post-war world will be considered.
- HI 485 United States History: The Civil War** 3 crs.
Background and causes of the Civil War, the military and naval aspects, Civil War music, art, and literature, diplomacy of the Civil War, the home front in the war, the plans for reconstruction, and military reconstruction. Lectures will be supplemented by slides, motion pictures, and recordings.
- HI 487 The American Revolution 1763-1787** 3 crs.
Background and causes of the American Revolution, the military, social, political, and diplomatic aspects of the Revolution. The government under the Articles of Confederation, and the problems engendered by the attainment of political independence.
- HI 488 United States History: The Colonial Period 1607-1763** 3 crs.
The settlement and growth of the English colonies of America, England's colonial policies, economic and institutional development in the provincial period, the wars with the Indians, the rivalry with the French in America.
- HI 489 United States History: The Early National Period** 3 crs.
The course of United States history from the establishment of the republic to the election of Andrew Jackson will be studied.
- HI 490 Jacksonian Democracy and the Coming of the Civil War** 3 crs.
The election of Andrew Jackson and the "rise of the common man," the Whig-Democrat rivalry, the Texas question, Manifest Destiny, the rise of abolitionism, the events leading to the outbreak of the Civil War.

- HI 491 English History to 1603** 3 crs.
From Roman times to the accession of the Stuart dynasty.
- HI 493 United States History 1865-1900** 3 crs.
The emphasis is on Reconstruction, Populism and Bryan, The Golden Age and Cleveland, McKinley and imperialism.
- HI 494 Modern German History** 3 crs.
From the reign of Frederick the Great to the end of World War II.
- HI 498 Internship in History** 3-15 crs.
Prq.: Consent of Department.
Intended to expose student participants to historical artifacts and primary source material. Host agencies may include museums and public and private historical organizations.
- HI 499 Directed Study in History** 1-3 crs.
Prq.: Consent of the Department.
Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits or with an internship program — combined credit maximum, 6.
- HI 501 Seminar in Historical Methodology** 3 crs.
Prq.: Acceptance in a master's degree program at Bridgewater State College.
The basic methods of historical research and historical writing and the proper use of primary and secondary sources, bibliography; documentation, and annotation will be studied.
- HI 502 Research** credit to be arranged.
Prq.: Approval of the Advisor.
Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.
- HI 503 Directed Study** credit to be arranged.
Prq.: Approval of the Advisor.
Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.
- HI 505 History of the American Sciences** 3 crs.
The role of science, leading American scientists, and the formation of major scientific organizations and government scientific agencies in American history.
- HI 521 Pilgrim Heritage Seminar** 3 crs.
The Pilgrims in their economic, social, and religious setting. Admission only with the consent of the Instructor.

Department of Political Science

Professor Robert N. Larson, Chairperson

Professor Walter Adamson

Assistant Professors: Guy Clifford, Michael Kryzanek

UNDERGRADUATE PROGRAMS

Bachelor of Arts/Bachelor of Science

The program of study for political science majors is designed to give students an understanding of the political and governmental structure in their own country and in

other parts of the world, and to develop their interest in contemporary public affairs and governmental problems. The political science major aims to provide a foundation for the study of law, for graduate work in political science or public administration with a view toward teaching or government service, and for work in international relations.

The Political Science Major/Secondary Education Minor is designed for those students who major in Political Science and plan to pursue a career of teaching in secondary schools.

Political Science Major

PO 272, PO 277, PO 371, PO 372, PO 373, PO 374, PO 375, PO 376, PO 472, PO 473, PO 475

EC 200, EC 320

HI 111-112, HI 221, HI 222, HI 318 and one additional History course.

A one-year sequence of foreign language study at the intermediate level, or its equivalent.

Political Science Major/Secondary Education Minor

PO 271, PO 272, PO 277, PO 371, PO 372, PO 375, PO 379, PO 471

HI 111-112, HI 221, HI 222 plus four additional History courses.

A one-year sequence of foreign language study at the intermediate level, or its equivalent.

GRADUATE PROGRAM

The Department of Political Science does not offer a program at the master's degree level at this time. Political science courses may be taken, with faculty advisor approval, in a program leading to the degree of Master of Arts in Teaching with a concentration in the social sciences. Additional information regarding this degree may be found in the Graduate School section of this catalogue.

The departmental offerings listed below include the following courses which may **not** be used in partial fulfillment of M.A.T. degree requirements: PO 271, PO 273, PO 277, PO 499.

COURSE OFFERINGS*

PO 271 Western Political Thought — Plato to the Present 3 crs.

Development of political ideas from ancient times to the modern era.

PO 272 American Government: the Federal System 3 crs.

The constitutional authority, organization, activities, and political processes of the national government.

PO 273 U.S. and Massachusetts Constitutions 1 cr.

Structure of government and rights and responsibilities according to Federal and Commonwealth constitutions.

PO 277 American Government: State and Local Government 3 crs.

Prq.: PO 272.

State government and politics with emphasis on Massachusetts affairs.

PO 371 Comparative Government 3 crs.

Prq.: PO 271 or PO 272.

Political behavior and governmental systems in Great Britain, France, the Soviet Union, etc.

PO 372 Legislative Process and Procedure 3 crs.

Prq.: PO 272, PO 277.

The role of legislatures in modern American government, federal and state; the relationships of the voter and of apportionment to law-making; the two-party system and its impact on the law-making process; the committee system and seniority, and constitutional limitations on legislatures.

PO 373 Political Theory — Ancient and Medieval 3 crs.

Prq.: PO 272.

Western political thought from Plato to Sir Thomas More. Emphasis upon the basic concepts and persistent questions of political theory and their relevance to contemporary problems through systematic analysis of major works.

PO 374 Political Thought: Modern and Contemporary 3 crs.

The ideas of major political thinkers in the era of the modern nation-state.

PO 375 Political Parties 3 crs.

Prq.: PO 272, PO 277.

The historical development of the American party system, and contemporary aspects of its functioning, at the national, state, and local level.

PO 376 Municipal Government 3 crs.

Prq.: PO 272, PO 277.

Study of selected problems of structure, organization, and powers of local government; intergovernmental relationships; administrative and personnel management; special emphasis on local government in Massachusetts.

PO 379 Introduction to Public Administration 3 crs.

Prq.: PO 272, PO 277.

The relationship of the administrative branch of government to other branches in the making and implementation of public policy; theories of government organization for efficient administration; problems of budgeting, personnel, merit systems, types of agency organization, popular control over the bureaucracy.

PO 381 United States — Latin American Relations 3 crs.

Prq.: PO 272, PO 277.

The evolution and current status of the political, economic and strategic relationship between the United States and the Latin American nations.

PO 382 Latin American Government and Politics 3 crs.

Prq.: PO 272, PO 277.

A survey of the current governing structures and the general political conditions in the major Latin American nations.

PO 383 Comparative Political Systems 3 crs.

Prq.: PO 272, PO 277.

An advanced investigation and comparison of the primary political institutions and processes found in a number

*See page 50 for general information regarding course offerings.

of contemporary national systems. Special emphasis to be placed on the role and status of constitutions, interest groups, political parties, policy-making bodies and other areas.

PO 384 United States Foreign Policy Sincy World War II **3 crs.**

Prq.: Junior status and permission of the Instructor.

The study of the goals, policies, structures and procedures that have formed and guided the relations of the United States with other world powers since the conclusion of World War II.

PO 385 Law for the Layman **3 crs.**

A non-technical discussion of legal topics, including the relationship of law to social and humanitarian problems; open to majors and non-majors.

PO 386 Canadian Government **3 crs.**

Prq.: PO 271 or 272 or permission of Instructor.

The origins and development of the government of Canada from Confederation; the transition from colonial to dominion status, the Statute of Westminster, and independence. Federal government organization; relations with the British Commonwealth.

PO 387 Government and Politics of Africa **3 crs.**

Prq.: PO 371 or consent of Instructor.

An introduction to the organization and processes of African politics centering on the political evolution of contemporary Africa in general but with specific attention to selected nations as appropriate.

PO 471 International Relations **4.5 crs.**

Prq.: Senior status and permission of Instructor.

The patterns of inter-state relations, the development of international law, international organizations, and the factors motivating the behavior of nations. Three periods weekly for one and one-half semesters.

PO 472 American Constitutional Development **3 crs.**

Prq.: PO 272, PO 277, PO 374.

Principles and concepts of the U. S. Constitution, as revealed in leading court decisions. Judicial review, federalism, separation of powers, implied powers, due process of law, equal protection, the contract clause, etc.

PO 473 International Law and Organization **3 crs.**

Prq.: Permission of the Instructor.

The evolution of international law and organization from early beginnings to the United Nations system; the principles of international law and organization, their integration, and the effect of international politics thereon; the theoretical and practical aspects of the international legal process; the structure, functions and procedures of the United Nations, etc.

PO 475 Senior Seminar in Political Science **3 crs.**

Prq.: Admission is subject to the consent of the department chairman and the instructor.

The undertaking of independent study, and a research project presented in oral and written form.

PO 498 Internship in Political Science **3-15 crs.**

Prq.: Consent of Department Chairperson.

A non-classroom experience intended to complement the academic preparation of a limited number of juniors and seniors majoring in political science. Placements are in areas such as federal, state, city, and town governments and private interest groups.

PO 499 Directed Study in Political Science **1-3 crs.**

Prq.: Consent of the Department Chairman.

Open to Juniors and Seniors who have demonstrated critical and analytical abilities in their studies and who wish to pursue a project independently. May be taken twice for a maximum of six credits.

PO 502 Research **credit to be arranged.**

Prq.: Approval of the Advisor.

Original research undertaken by the graduate student in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

PO 503 Directed Study **credit to be arranged.**

Prq.: Approval of the Advisor.

Designed for the graduate student who desires to study selected topics in his field. For details, consult the paragraph entitled "Independent Study" in the Graduate School section of this Catalogue.

Undergraduate Interdisciplinary & Pre-Professional Programs

AMERICAN STUDIES

The program is open to all college students, although the greatest number of participants will most likely come from students majoring in English or History.

Designed to complement the student's major, the program examines the development of American society and culture from several perspectives. It features a study of the United States through a combination of relevant courses in a variety of academic areas: history, literature, art, philosophy, religion, political science and others. Through its interdisciplinary focus, the concentration tries to encourage an integrated and inclusive sense of the American experience.

The area around Bridgewater is rich in library and museum resources for American Studies. In addition to the holdings of Boston area colleges and universities, there are the collections of the Massachusetts Historical Society, the Pilgrim Museum, Plimoth Plantation, the Whaling Museum in New Bedford, the Brockton Art Center, the Boston and Providence Athenaeums, the John Carter Brown Library and the Harris Collection at Brown University. Bridgewater itself has the new Microbook Library of American Civilization and the PCMI humanities collection.

A student wishing to pursue an American Studies program will ordinarily be assigned an advisor from the American Studies Committee, and will be expected to take the following sequence of courses in his sophomore junior and senior years:

Beginning students will enroll in the sophomore year in the special introductory American Studies course.

Juniors will enroll in an American Studies seminar which will focus on a specific problem or group or problems using the tools of various academic disciplines.

A senior seminar will be offered, in which the students will have more freedom and be expected to produce more sophisticated work.

In consultation with his American Studies advisor, the student will choose a group of at least FOUR additional courses in fields relating to the program. Most likely, these courses will be spread over the junior and senior years. History and English majors must choose two of these courses (6 hours) in their respective majors.

For further information, interested students should contact Professor Joseph Yokelson of the English Department.

BEHAVIORAL SCIENCES/HISTORY

A joint major with history is available for those majoring in anthropology, psychology or sociology who wish to become certified as Social Studies teachers. This program is open only to those students who elect a Secondary Education minor.

The requirements for the Secondary Education minor are listed under the Department of Secondary Education.

History requirements for a joint major:

Sequential courses: HI 111, HI 112, or any sequences of 121, 122, 123 or 124 as well as HI 221 and HI 222. Four additional History courses (two of which must be in non-U.S. History.)

Anthropology requirements for a joint major: Any nine courses in Anthropology.

Behavioral Sciences requirements for a joint major: AN 201, AN 205, SO 202, SO 306, PY 100, PY 310. Two additional courses in one of the three departments.

Psychology requirements for a joint major: PY 100, PY 210, PY 226, PY 310.

Five additional courses in Psychology.

Sociology requirements for a joint major: SO 202, SO 303, SO 306, SO 400.

Five additional courses in Sociology.

CANADIAN STUDIES

The Canadian Studies program has been developed as an area studies in response to faculty, student and regional interest. The national origins of a large portion of the population of Southeastern Massachusetts reflect strong Canadian ties from both the French and English communities.

The program is designed to supplement and give a multi-cultural dimension to one's major by an in-depth study of our northern neighbor. The study is presented in the following academic areas: history, literature (English and French), geography, music, education and political science.

Students may enter the Canadian Studies program during the sophomore or junior years and will be assigned an advisor in their major fields, usually a member of the college Council for Canadian Studies.

ID 200 An Introduction to Canadian Studies

3 crs.

An interdisciplinary course which acts as the initial course for the general student and for those wishing to pursue a track in Canadian Studies. The following areas are included: anthropology, art, economics, education, English, French, geography, government, history, music, religion, sociology and theatre.

In addition to ID 200, An Introduction to Canadian Studies, students in the program should select courses from those listed below.

HI 335 Canadian History to Confederation
 HI 336 Canadian History since Confederation
 HI 435 History of Canadian-American Relations
 GS 453 Geography of Canada
 EN 283 & 284 Major Canadian Writers in English
 EN 384 Modern Canadian Fiction in English
 EN 385 Canadian Poetry in English

EN 491 Seminar in Canadian Literature
 PO 386 Canadian Government
 ED 384 Canadian Education Seminar
 MU 368 Folk Music of Canada
 LF 211 Twentieth Century French Canadian Writers
 LF 222 Introduction to French-Canadian Literature
 LF 261 Introduction to the Civilization and Language of French Canada

For further details contact Professor John Myers of the History Department.

CHEMISTRY — GEOLOGY

A major in Chemistry-Geology is offered jointly by the Departments of Chemical Sciences and Earth Sciences and Geography. This program is designed to prepare students for graduate school and professional employment in geo-chemistry and geology. Careers in these fields may involve petroleum, mineral and groundwater exploration, or research in geochronology, mineralogy, crystallography and oceanography. This major is particularly suited to students interested in chemical or geological oceanography. The program is flexible in that it allows the student to specialize in a variety of areas by suitable choice of electives.

Chemistry-Geology majors are required to take the following courses: CH 141-142 (or CH 131-132); ES 100, 101, 372. In addition to the above requirements, majors must elect a minimum of two additional semesters of chemistry, two semesters of physics, and two semesters of mathematics. In addition to these electives the student must elect a minimum of six hours of chemistry, earth sciences, mathematics, or physics which have been approved by the student's advisor.

The Chemistry-Geology major at Bridgewater State College is recognized by the New England Student Regional Program as an undergraduate four-year degree opportunity for residents of New England. Students who are legal residents of Connecticut, Maine, New Hampshire, Rhode Island, and Vermont and are accepted for study in this major will pay only the in-state tuition fee.

OCEANOGRAPHY

Programs in oceanography are offered as a cooperative effort of all departments within the Division of Natural Sciences and Mathematics. These programs are designed to prepare students for graduate school or professional employment in oceanography. Bridgewater State College is a member of the Marine Sciences Consortium based at the Massachusetts Marine Academy. Summer programs in the Consortium allow the student to participate in course work in specialized areas of oceanography, to participate in research, and to gain experience

Undergraduate Interdisciplinary Programs

in actual field techniques on board ship. Participation in this program provides the student with the necessary foundation for either further academic work in oceanography or employment in a variety of areas.

Most graduate schools of oceanography require an undergraduate major in biology, chemistry, earth sciences, or physics. All students interested in an oceanography program should major in one of these disciplines. Graduate schools of oceanography expect students to include the following courses in their undergraduate programs: Calculus I and II, Inorganic Chemistry and Qualitative Analysis or General Chemistry, General Physics or elements of Physics, Quantitative Analysis, General Botany, General Zoology, Physical Geology, and Introduction to Oceanography I and II.

These courses, together with one of the majors indicated above, provide a basic foundation for further study in one of the four principal branches of oceanography, i.e.: biological oceanography, chemical oceanography, geological oceanography, and physical oceanography. Additional courses in related areas may be selected by the student with the approval of his major advisor. A student who is interested in oceanography should consult both his major advisor and a member of the Advisory Committee on Oceanography during his freshman year. Advisory Committee on Oceanography: Professors Elizabeth Cirino (Chairman), Robert Boutlier, Henry Daley.

PRE-DENTAL

While some dental schools admit applicants after three years of college work, most prefer students with a bachelor's degree. As in medicine, there is no requirement for a major in a particular discipline. Most students who plan to enter dentistry as a profession will find it advisable to major in either biology or chemistry. Applicants for dental school should meet the requirements of the major in a given department and must also satisfy the requirements in biology, chemistry, physics, and English as set by each dental school. A student who is interested in dentistry should consult both his major advisor and a member of the Pre-medical and Pre-dental Committee early in his freshman year. Pre-medical and Pre-dental Committee: Professors Wilmon Chipman, Kenneth Howe (Chairman), Walter Morin.

PRE-MEDICAL

Although medical schools indicate that they do not require a major in a particular discipline, they expect applicants to have achieved high academic standing in the fields of biology, chemistry, physics, mathematics, English, and foreign languages. Most students who plan to enter medicine as a profession will find it advisable to major in either biology or chemistry. A student who is interested in medicine should consult both his major advisor and a member of the Pre-medical and Pre-dental Committee early in his freshman year.

URBAN AFFAIRS

The College offers an interdisciplinary minor in Urban Affairs under the auspices of the Anthropology, Geography, History, Political Science, Psychology, and Sociology Departments. A major purpose of this minor is to provide students with a broader understanding and sensitivity of the complex problems facing the urban environment through the combined efforts of different disciplines at the college. The minor, through its internship program, is designed to provide students with an opportunity for direct contact and work in fields such as urban planning, urban government, social welfare, social psychology, and urban education.

Some examples of internships which are assigned according to the abilities, interests, and background of the student, and the current needs of the cooperating communities or agencies, are:

Through the Department of Earth Sciences and Geography

City and regional planning; Economic development — Land use; Environmental protection; Transportation studies; Cartography — drafting.

Through the Department of History

Internships working with Historical Affairs Commissions; assisting community organizations in oral history projects, and writing about local history.

Through the Division of Behavioral Sciences

Work in human services agencies; Survey research in public institutions; Work in community organizations and voluntary agencies.

Option A

Students may choose four out of the following six courses:

AN 307 Urban Cultural Dynamics
HI 426 History of the American City
PY 210 Applied Social Psychology

GS 353 Urban Geography
SO 306 Urban Sociology
PO 376 Municipal Government

Internship: (6) credits. (Equal to 8 wks., full time or 16 wks. half time)

Option B

Students may choose four out of the six courses listed under Option A, plus two courses from the list below:

GE 354 Field Methods in Urban Geography
HI 325 American Labor History
PO 277 State and Local Government

SO 312 Minority Relations
SO 307 Urban Problems
SO 325 Community Organization

499 Directed Study in individual departments participating

Courses taken to satisfy requirements of a major may not be counted in the minor. Students interested in this program are encouraged to take their General Education electives in the area of minority studies.

Students interested in this program should contact:

1. Professor Robert Dillman, Department of Earth Sciences & Geography
2. Professor Clay Greene, Department of Sociology
3. Professor Lucille O'Connell, Department of History

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Assistant Professor of Political Science
B.S. (Tufts College)
M.A., Ph.D. (University of Massachusetts)

ANN OLDHAM COAKLEY

Assistant Professor of Physical Education
B.S. (Boston University)
M.Ed. (University of North Carolina)

WILLIAM ROSWELL COLE*

Professor of History
A.B. (University of Massachusetts)
M.A., Ph.D. (Boston University)

CATHERINE EVELYN COMEAU*

Professor of Physical Education and
Chairperson of the Department of Health
and Physical Education
B.S. (Boston University)
M.A. (Columbia University)
Ed.D. (Boston University)

JOSEPH JOHN CORKERY

Associate Professor of Philosophy
A.B., A.M. (Boston College)

ANTHONY CHARLES COTUGNO

Assistant Professor of Spanish
B.S. (Northeastern University)
M.Ed. (Boston State College)
M.A. (Boston College)

DAVID MALLORY CULVER*

Assistant Professor of History
A.B. (Colgate University)
M.A., Ph.D. (Boston University)

THOMAS MICHAEL CURLEY*

Assistant Professor of English
A.B. (Boston College)
M.A., Ph.D. (Harvard University)

HUGO TRIGO D'ALARCAO*

Associate Professor of Mathematics
B.A., M.A. (University of Nebraska)
Ph.D. (Pennsylvania State University)

HENRY OWEN DALEY, JR.*

Professor of Chemistry
B.S. (Bridgewater State College)
Ph.D. (Boston College)

*Indicates member of the Graduate Faculty

ROBERT ALPHONSE DANIEL *

Professor of Education
A.B. (Howard University)
M.A. (University of Iowa)
Ed.D. (Pennsylvania State University)

DAYNA BETH DANIELS

Instructor of Physical Education
B.S. (Ithaca College)
M.S. (Indiana University)

THEODORE CHARLES DAVIDOVICH*

Assistant Professor of Music
B.A. (San Jose State College)
M.M. (New England Conservatory of Music)
D.M.A. (Stanford University)

ROBERT DALE DAWLEY

Assistant Professor of French
B.A. (St. Lawrence University)
M.A. (Middlebury College)

JOHN PETER DEASY*

Professor of Education
A.B. (Providence College)
Ed.M., Ed.D. (Boston University)

JUDITH ANN DECKERS*

Assistant Professor of Education
B.S. (Worcester State College)
M.Ed. (Boston University)

DAVID PAUL DEEP

Instructor of Health & Physical Education
and Associate Dean of Students
B.S. (University of Bridgeport)
M.S. (Springfield College)

STANLEY ALBERT DEETZ*

Assistant Professor of Communication
Arts and Sciences
B.S. (Manchester College)
M.A., Ph.D. (Ohio University)

ANTHONY VINCENT DELEO*

Associate Professor of Education
A.B., M.A. (Boston University)
M.Ed. (Bridgewater State College)
Ph.D. (Boston College)

HAROLD FRANCIS DELISLE*

Assistant Professor of English
B.S. (Bridgewater State College)
M.A. (Boston College)
Ph.D. (Tufts University)

JOSEPH DE ROCCO*

Professor of English
A.B., M.A., Ph.D. (Columbia University)

WAYNE F. DICKINSON*

Associate Professor of Education and Chairperson
of the Department of Elementary Education
B.S., M.S. (State University of New York,
Oswego)
Ed.D. (Syracuse University)

ROBERT JOHN DILLMAN

Assistant Professor of Earth Sciences
B.A. (State University of New York at
New Paltz)
M.A. (Pennsylvania State University)

VINCENT JAMES DI NARDO*

Professor of Education, Dean of Undergraduate
Studies and of Special Programs, and Direc-
tor of Hyannis Summer session
B.S. (Bridgewater State College)
Ed.M., Ed.D. (Boston University)

GERALD JOSEPH DOIRON*

Professor of History
B.A. (University of Maine)
M.A. (University of Rhode Island)
Ph.D. (Boston University)

MARIAN CLAIRE DOYLE

Assistant Professor of Education
B.S., M.S. (State University of New York
at Potsdam)

DIANA DRAHEIM*

Assistant Professor of Education
A.B. (College of the Holy Names)
M.S. (California State College,
Hayward)
D.Ed. (Boston University)

JOHN JONES DROEGE*

Assistant Professor of Art
B.S., M.A., M.A.T. (Notre Dame
University)

LEE ANNE DUNNE*

Assistant Professor of Communication Arts and
Sciences and Chairperson of the Department
of Communication Arts and Sciences
B.S. (Northwestern University)
M.A. (Hunter College)

WARREN DAVID ENGLUND*

Associate Professor of Education
B.A. (Simpson College)
M.S. in Ed. (Drake University)

JACQUELINE CAROL ENOS*

Assistant Professor of French and Chairperson of
the Department of Foreign Languages
B.A. (University of Massachusetts)
M.A. (Radcliffe College)
Ph.D. (Harvard University)

RICHARD L. C. ENRIGHT*

Associate Professor of Geology
B.A., M.S., Ph.D. (Rutgers University)

KENNETH WARREN FALKNER*

Professor of Music and Chairperson of the
Department of Music
B.Mus.Ed. (Westminster College)
M.A. (University of Connecticut)
Ph.D. (University of Iowa)

CHARLES FREDERICK FANNING*

Assistant Professor of English
A.B., M.A.T. (Harvard University)
M.A., Ph.D. (University of Pennsylvania)

HENRY JOSEPH FANNING, JR.*

Assistant Professor of Education, Director of
Admissions and Acting Director of the
Division of Continuing Education
B.S. (Boston College)
M.Ed. (Bridgewater State College)
Ed.D. (Clark University)

DOROTHY ROSE FERRY*

Associate Professor of Music
B.Mus., M.Mus.Ed. (Boston University)

JORDAN DOMINIC FIORE*

Professor of History and Director of the
Division of Social Sciences
A.M., Ph.D. (Boston University)

LON FISHMAN

Instructor in Instructional Media
B.A. (State University of New York at New Paltz)
M.A. (University of Massachusetts at Amherst)

ROBERT EDWARD FITZGIBBONS*

Associate Professor of Education and Acting
Chairperson of the Department of Secondary
Education
A.B. (Tufts University)
Ed.M. (Temple University)
Ph.D. (Boston University)

ROBERT FRIEDMAN*

Assistant professor of Communication Arts
and Sciences
B.A., M.A. (Brooklyn College)
Ph.D. (New York University)

IRA ELLSWORTH FURLONG*

Professor of Geology
A.B., M.A., Ph.D. (Boston University)

MARILYN HAYDEN FURLONG

Assistant Professor of Geography
B.S. (Bridgewater State College)
M.A. (Clark University)

VINCENT HAROLD GANNON*

Associate Professor of Music
B.S. (Boston University)
A.M.T. (Harvard University)

JOSEPH MATTHEW GIANNINI

Associate Professor of Foreign
Languages
A.B., A.M. (Boston University)

WALTER JOSEPH GLEASON*

Assistant Professor of Mathematics
B.S. (Boston State College)
M.A. (Boston College)

BURTON DAVID GOLDMAN

Assistant Professor of Education
B.S., M.Ed. (Bridgewater State College)
Ed.D. (Boston University)

MAUDE CLAY LITTLE GREENE*

Professor of Sociology and Chairperson of the
Department of Sociology
A.B., M.A. (University of Alabama)
Ph.D. (University of Virginia)

HERBERT JEROME GREENWALD*

Professor of Psychology
B.S., B.A., M.A. (Columbia University)
M.S. (Long Island University)
Ph.D. (Columbia University)

REGINA MARY GROSS

Associate Professor of Physical Education
B.S. (Boston University)
M.A. (Columbia University)
D.P.E. (Springfield College)

MARGARET FRANCES GUERIN

Associate Professor of English
B.S. (Bridgewater State College)
A.B., A.M. (Boston University)

STANLEY HAMILTON*

Assistant Professor of Foreign Languages
B.A. (DePauw University)
M.S. (Indiana State University)
Ph.D. (University of Michigan)

RAY GRANT HARPER*

Professor of Education and Director of the
Division of Professional Education
B.S.Ed. (Drake University)
M.A., Ph.D. (University of Iowa)

JOAN W. HAUSRATH

Assistant Professor of Art
B.S., M.F.A. (Bowling Green State University)
M.A. (Ohio State University)

JOHN HELLER*

Associate Professor of Art
B.F.A., M.F.A. (Pratt Institute)

JANE HERRICK

Professor of History
A.B. (College of St. Teresa)
M.A., Ph.D. (The Catholic University of
America)

WALTER MILTON HEWITSON*

Professor of Biology
A.B. (Miami University)
M.S. (Cornell University)
Ph.D. (Washington University)

ELIZABETH MAYNARD HIGGINS

Instructor of Education
B.S. (Bridgewater State College)
M.Ed. (Boston University)

*Indicates member of the Graduate Faculty

FRANK JOSEPH HILFERTY*

Commonwealth Professor of Botany, Director
of the Division of Natural Sciences and
Mathematics, and Dean of the Graduate
School

B.S. (Bridgewater State College)
Ph.D. (Cornell University)

ROBERT BURNEY HOEKZEMA

Assistant professor of Earth Sciences
B.A. (Alaska Methodist University)
A.M. (Boston University)

VIRGINIA LEE HOGG

Assistant Professor of Physical Education
B.S., M.Ed. (Bridgewater State College)

ELIZABETH HOLLIS

Associate Professor of Psychology
B.S. (Boston University)
M.A. (Columbia University)

GEORGE ROLAND HORNER*

Professor of Anthropology, and Acting
Chairperson of the Department of
Anthropology
B.S. (Wheaton College)
M.A. (Columbia University)
D.en lettres (Sorbonne, University of Paris)

LESTER GRANT HOUSTON

Associate Professor of Sociology
A.B. (Howard University)
M.S. in S.S. (Boston University)

KENNETH JESSE HOWE*

Professor of Botany and Chairperson of the
Department of Biological Sciences
B.A., M.S. (University of Rochester)
Ph.D. (Cornell University)

JOSEPH HENRY HUBER*

Assistant Professor of Health and Physical
Education
B.A. (West Chester State College)
M.S. (University of Maryland)
Ph.D. (Ohio State University)

JOHN CURTIS JAHODA*

Associate Professor of Zoology
B.A. (University of Connecticut)
Ph.D. (Oklahoma State University)

EDWARD WARREN JAMES

Assistant Professor of Philosophy and
Religious Studies
B.A. (Tufts University)
Ph.D. (University of Southern California)

MARY LOUISE JARVIS

Associate Professor of English
B.S., M.Ed. (Bridgewater State College)
M.A. (Middlebury College)

DONALD RAY JOHNSON*

Associate Professor of English
B.A., M.A. (University of Hawaii)
Ph.D. (University of Wisconsin)

MARGARET MUNSON JOHNSON

Instructor of Psychology
B.A. (Macalester College)
M.A. (Boston University)

IAN HAVILAND JOHNSTONE*

Assistant Professor of Music
B.Mus. (Mount Allison University)
Mus.M. (University of Redlands)
A.Mus.Doc. (University of Oregon)

JOHN WILLIAM JONES*

Assistant Professor of Education
B.S., M.Ed. (Bridgewater State College)
M.S. (Syracuse University)

MARTHA DRINKWATER JONES*

Assistant Professor of Education
B.S. (Bridgewater State College)
M.Ed. (Tufts University)

ACHILLE ADRIEN JOYAL*

Associate Professor of Philosophy
A.B. (St. Mary's University)
A.M. (New York University)

MARGARET THERESE JOYCE

Assistant Professor of Education
B.S., M.Ed. (Bridgewater State College)

WAYNE MAURICE JUDAH*

Professor of French
A.B., M.A., Ph.D. (Indiana University)

FRANCIS JOSEPH KEANE

Instructor in Health and Physical Education
B.S.; Ed.D. (Boston University)
M.Ed. (Springfield College)

DONALD LUNDEEN KEAY

Professor of History and Acting Chairperson
of the Department of Economics
B.S. (Bridgewater State College)
M.A.T. (Harvard University)
Ph.D. (Boston University)

ULYSSES GRANT KEENER*

Associate Professor of English
B.A. (Columbia College)
M.A., Ph.D. (Columbia University)

PAUL FRANCIS KELLEY*

Associate Professor of Education
B.S., M.Ed. (Bridgewater State College)

WILLIAM LOWELL KENDALL

Assistant Professor of Art
B.S. (University of Minnesota)
M.S., M.F.A. (University of Wisconsin)

ISABELLE BRAGG KING*

Associate Professor of Education and Acting
Chairperson of the Department of Educational Services
B.S., M.Ed. (Bridgewater State College)
Ph.D. (Boston College)

THOMAS ALLAN KNUDSON*

Associate Professor of Physical Education
B.S. (Wisconsin State College, La Crosse)
M.S., D.P.E. (Springfield College)

MARGERY ANN KRANYIK*

Assistant Professor of Education
B.S., M.S. (Western Connecticut State College)
Ed.D. (Boston University)

SHIRLEY JANE KRASINSKI

Assistant Professor of Physical Education
B.S. (University of Connecticut)
M.S. (University of Massachusetts)

SHIRLEY MILLER KRICK

Instructor of Education
B.S., M.S. (Indiana University)

MICHAEL JOHN KRYZANEC

Assistant Professor of Political Science
B.A. (Marquette University)
M.A., Ph.D. (University of Massachusetts)

FRANCIS JAMES LAMBIASE*

Assistant Professor of Mathematics
A.B. (Stonehill College)
M.S. (Clarkson College of Technology)

ALAN LANDER*

Associate Professor of Instructional Media and
Acting Chairperson of the Department of Instructional Media
B.S., M.Ed. (Bridgewater State College)
Ed.D. (Boston University)

ROBERT NELSON LARSON*

Professor of Political Science and
Chairperson of the Department of Political Science
A.B. (Columbia University)
A.M. (Tufts University)
A.M., Ph.D. (Boston University)

HARRY AUGUST LEHMANN*

Associate Professor of Physical Education
B.S., M.Ed. (Springfield College)

ROBERT ELWOOD LEMOS*

Associate Professor of Mathematics
B.S. (Bridgewater State College)
Ed.M. (Harvard University)

WILLIAM CHARLES LEVIN

Assistant Professor of Sociology
B.S., M.S. (Boston University)
Ph.D. (Northeastern University)

STEPHEN MARK LEVINE

Assistant Professor of Communication
Arts and Sciences
B.A. (Moravian College)
M.A., Ph.D. (University of Denver)

JACOB LIBERLES

Assistant Professor of Music
B.S. (Lowell State College)
M.A. (Bennington College)
D.M.A. (Boston University)

JOSEPH JOHN LIGGERA*

Assistant Professor of English
B.A. (New York University)
M.A., Ph.D. (Tufts University)

DENNIS LEO LYTHGOE*

Professor of History
B.A., M.A., Ph.D. (University of Utah)

ROBERT DOUGLAS MAC CURDY*

Professor of Education
B.S. (University of Massachusetts)
M.S. (Michigan State University)
Ed.D. (Boston University)

AGRIPPINA ANNE MACEWICZ*

Professor of Earth Sciences and Geography
B.S. (Worcester State College)
M.A., Ph.D. (Clark University)

EMANUEL MAIER*

Professor of Geography and Chairperson of the
Department of Earth Sciences and Geography
A.B., M.E.S. (City College of New York)
Ph.D. (New York University)
Ph.D. (Clark University)

HENRY MYRON MAILLOUX*

Associate Professor of Mathematics
B.S. (Fordham University)
M.A. (Columbia University)

MICHAEL MAKOKIAN*

Associate Professor of Mathematics
B.A. (Rhode Island College)
M.A. (Rutgers University)

VAHE MARDIROSIAN*

Professor of Chemistry
B.S. (San Francisco State College)
M.S., Ph.D. (Clemson University)

JAMES MARTIN

Assistant Professor of Health and Physical
Education
B.S. (Southern Connecticut State College)
Ed.M. (Boston University)

PETER MAZZAFERRO

Assistant Professor of Physical Education
B.A. (Centre College)
M.Ed. (Springfield College)

*Indicates member of the Graduate Faculty

CHARLES F. MC GINNIS*

Professor of English
A.B. (Tufts University)
M.A. (Boston College)
Ph.D. (Columbia University)

OWEN THOMAS MC GOWAN*

(ranking) Librarian
A.B. (Maryknoll College)
M.S. in L.S., Ph.D. (The Catholic University of America)

LEO JOSEPH McGUIRK*

Assistant Professor of Education
B.A. (University of Massachusetts)
M.Ed. (Bridgewater State College)
Ph.D. (Boston College)

ROBERT G. MEARS

Assistant Professor of Health and Physical Education
B.A. (University of Richmond)
M.Ed. (University of Virginia)

LAWRENCE BRONISLAW MISH*

Professor of Botany
A.B. (University of Connecticut)
A.M., Ph.D. (Harvard University)

SUSAN JANE MISKELLY

Assistant Professor of Communication Arts and Sciences
B.A. (Towson State College)
M.A. (Bowling Green State University)

ROBERT LEON MOGILNICKI*

Associate Professor of Education
B.Mus. (New England Conservatory of Music)
M.Mus., Ed.D. (Boston University)

THOMAS EUGENE MOORE*

Assistant Professor of Mathematics
A.B. (Stonehill College)
M.S. (University of Notre Dame)

WALTER ARTHUR MORIN*

Professor of Zoology
A.B. (Merrimack College)
M.S. (Boston College)
Ph.D. (Clark University)

FLORIAN AUGUST MUCKENTHALER*

Associate Professor of Biology
B.S. (Spring Hill College)
Ph.D. (The Catholic University of America)

JAMES WILLIAM MUELLER*

Associate Professor of Anthropology
A.B. (Rutgers University)
M.A., Ph.D. (University of Arizona)

JOHN FORDYCE MYERS*

Assistant Professor of History and Chairperson of the Department of History
A.B. (Bates College)
A.M. (Boston University)

MARIAN EMMA NELSON

Assistant Professor of Education
B.S., M.Ed. (Bridgewater State College)

JAMES KERON NERNEY

Assistant Professor of English
A.B. (University of Notre Dame)
M.A. (Boston College)

RICHARD ARTHUR NEUBAUER*

Assistant Professor of Library Science
B.S. (Clarion State College)
M.L.S. (State University of New York at Genesco)

CHARLES COLLINS NICKERSON*

Assistant Professor of English
A.B. (Harvard College)
B.Litt., D.Phil. (Oxford University)

CHESTER MICHAEL NOWAK*

Assistant Professor of History
A.B., M.A., Ph.D. (Boston University)

BETTY ANN NOYES

Assistant Professor of Education
B.S., M.Ed. (Bridgewater State College)

ADELINE DUPUY OAKLEY*

Assistant Professor of Library Science
B.S. (Bridgewater State College)
M.L.S. (Simmons College)

LUCILLE O'CONNELL*

Associate Professor of History
B.A. (Brooklyn College)
Ph.D. (New York University)

ARTHUR CARLISLE OIEN*

Associate Professor of History
B.A. (Concordia College)
M.A. (University of Minnesota)

LENORA MARIE PADULA

Assistant Professor of Foreign Languages
B.A. (Emmanuel College)
M.A. (Boston College)
M.A. (Middlebury College)

JOSEPH MICHAEL PAGANO

Assistant Professor of Chemistry
B.S. (Massachusetts Institute of Technology)
M.S. (Boston College)

FELIX STANLEY PALUBINSKAS*

Professor of Physics
S.B. (Massachusetts Institute of Technology)
A.M.T. (Harvard University)
Ph.D. (Iowa State University)
M.D. (Tufts University)

CAROL STAMATIS PENDERGAST

Instructor in Art
B.A. (Dickinson College)
M.A., Ph.D. (Yale University)

Faculty

PATRICIA ANN PHILLIPS*

Professor of Health and Physical Education
B.S. (Bridgewater State College)
M.Ed., Ed.D. (Boston University)

WAYNE RICHARD PHILLIPS*

Associate Professor of Education
B.S. (Bridgewater State College)
M.A. (University of Connecticut)
Ed.D. (Boston University)

WILLIS NORMAN PITTS*

Professor of Communication Arts and Sciences
A.B. (Talladega College)
M.A., Ph.D. (University of Michigan)

BARBARA FREEMAN POE*SEPP

Assistant Professor of Education
B.S., M.Ed. (Bridgewater State College)

LOIS E. POULE

Assistant professor of English
A.B. (Emmanuel College)
M.A., Ph.D. (Indiana University)

ANDREW PLOTKIN

Instructor of Sociology
B.A.; M.S. (Boston University)

KAREN A. POWERS

Instructor of Education
B.S., M.Ed. (Bridgewater State College)

PAUL WILLIS PRESCOTT*

Assistant Professor of Education
B.S. (University of Maine, Gorham)
M.Ed., (Boston University)
Ed.D. (Boston College)

DOROTHY MAY PULSIFER

Instructor in Art
B.S., M.Ed. (University of Massachusetts)

RICHARD WAYNE QUINDLEY*

Assistant Professor of Mathematics
A.B., M.S. (Northeastern University)

CHRISTIANA POLLAK REORDAN

Assistant Professor of Foreign Languages
B.S. (University of Munich)
M.A. (Fordham University)

DAVID BRUCE RICHARDS

Instructor of Psychology
B.A. (University of Missouri)
M.A. (Clark University)

HAROLD GUY RIDLON*

Professor of English and Chairperson of the
Department of English
B.A. (Tufts University)
M.A., Ph.D. (Harvard University)

ROLF ONDECK RONNING*

Assistant Professor of Education
B.A. (St. Lawrence University)
M.A. (State University of New York at Plattsburg)
M.S., Ed.D. (State University of New York at Albany)

RONALD KENNETH ROSSI

Assistant Professor of Education
B.S., Ed.M., Ed.D. (Boston University)

MARJORIE ATWOOD RUGEN

Instructor in Physical Education
B.S. (Boston University)
M.A. (New York University)

STEVEN MATTHEW SANDERS*

Assistant Professor of Philosophy
A.B., M.A. (University of Miami)
Ph.D. (University of North Carolina at Chapel Hill)

HENRY JOSEPH SANTOS

Assistant Professor of Music
B.Mus. (Boston University)*

IGNATIUS PHILIP SCALISI*

Assistant Professor of Mathematics
B.S., M.S. (Northeastern University)

HAROLD PAUL SCHAEFER, JR.*

Associate Professor of Biology
B.A., Ph.D. (University of Connecticut)

LOUIS SCHIPPERS*

Associate Professor of Psychology
B.A. (Phillips University)
M.Div. (Texas Christian University)
Ph.D. (Boston University)

HAZEL LA ROCHELLE SCHOPP

Assistant Professor of Physical Education
B.S. (Hyannis State Teachers College)
M.Ed. (Bridgewater State College)

JAMES RUDOLPH SCROGGS*

Professor of Psychology
A.B. (Northeastern University)
B.D. (Harvard Divinity School)
Ph.D. (Boston University)

GEORGE COSTAS SETHARES*

Associate Professor of Mathematics
B.Mus. (Boston University)
M.A. (University of Massachusetts)
Ph.D. (Harvard University)

SAMUEL NORMAN SHEINFELD*

Professor of English
A.B., Ed.M., M.A., Ed.D. (Harvard University)

F. ERIC SILLS

Assistant Professor of Health and Physical Education
B.S. (West Chester State College)
M.S. (Northeastern University)

*Indicates member of the Graduate Faculty

PHILIP THOMAS SILVIA, JR.*

Associate Professor of History
B.A. (Providence College)
M.A., Ph.D. (Fordham University)

DONALD CLAYTON SIMPSON*

Assistant Professor of Mathematics
B.Ed. (Keene State College)
M.S. (Clarkson College of Technology)
M.A. (Rutgers State University)

FREDERIC JOSEPH SKALNY

Assistant Professor of Communication Arts
and Sciences
B.S. (State University College at Geneseo)
M.A. (Indiana University)
Ph.D. (State University of New York at Buffalo)

STEPHEN FRANCIS SMALLEY*

Associate Professor of Art and Chairperson of
the Department of Art
B.S. (Massachusetts College of Art)
M.Ed. (Boston State College)
D.Ed. (Pennsylvania State University)

IRA EUGENE SMILEY

Assistant Professor of Chemical Sciences
B.S. (Heidelberg College)
M.S. (Miami University)
Ph.D. (Purdue University)

JOHANNE MARIE SMITH

Assistant Professor of Physical Education
B.S. (East Stroudsburg State College)
M.S. (University of Illinois)

MARGARET BORDEN SOUZA*

Associate Professor of Chemistry
B.S. (Bridgewater State College)
M.S. (Boston College)

BENJAMIN ARTHUR SPENCE*

Professor of History
B.S. (Bridgewater State College)
M.S., Ph.D. (University of Wisconsin)

RICHARD ELTON STAFFORD*

Professor of Psychology and Chairperson of the
Department of Psychology
M.A. (University of Chicago)
A.M., Ph.D. (Princeton University)

JUDITH MC NUTT STANTON

Assistant Professor of English
B.A., M.A. (University of Maine)

REED FRANCIS STEWART

Assistant Professor of Anthropology and Geography
B.A. (Amherst College)
M.A. (Clark University)

JEAN FRANCES STONEHOUSE*

Assistant Professor of History
B.A. (Bridgewater State College)
M.A. (Boston University)

ROBERT FRANCIS SUTHERLAND*

Assistant Professor of Mathematics
A.B. (Stonehill College)
M.S. (University of Missouri at Kansas City)

EDWARD CARL SWENSON

Associate Professor of Physical Education and
Director of Athletics
B.S. (Boston College)
M.Ed. (Boston University)

MARJORIE MCMASTER TEITELBAUM

Assistant Professor of Education
A.B. (Wellesley College)
M.Ed. (Bridgewater State College)

ABRAHAM VAZHAYIL THOMAS*

Associate Professor of Sociology
B.A., M.A. (University of Madras, India)
S.T.M. (Union Theological Seminary)
Th.D. (Boston University)

MARY LOU THORNBURG*

Professor of Health and Physical Education
B.S. (Wisconsin State University at LaCrosse)
M.S. (University of North Carolina at Greensboro)
Ph.D. (University of Iowa)

GERALD JOSEPH THORNELL*

Assistant Professor of Education
B.A. (Curry College)
M.S. (Central Connecticut College)
D.Ed. (Boston College)

SUSAN ANN TODD*

Assistant Professor of Psychology
B.A., Ph.D. (Vanderbilt University)

THOMAS REED TURNER*

Assistant Professor of History
A.B., A.M., Ph.D. (Boston University)

PAULA MARION VADEBONCOEUR

Assistant Professor of English
A.B. (Merrimack College)
M.A. (Boston College)
Ph.D. (University of Wisconsin)

DELIA JOANA VALIUKENAS*

Assistant Professor of English
B.A. (Hunter College)
Ph.D. (Brown University)

WILLIAM JAMES WALL, JR.*

Professor of Zoology
B.S., M.S. (University of Massachusetts)
Ph.D. (University of California)

BARBARA HEIDELAUF WARD

Assistant Professor of Foreign Languages
A.B. (Oberlin College)
M.Ed. (Rutgers University)
Ph.D. (Boston College)

*Indicates member of the Graduate Faculty

Emeritus Faculty

ROBERT FRANCIS WARD

Assistant Professor of Instructional Media
B.S. (Bridgewater State College)
Ed.M. (Boston University)

RICHARD JONATHAN WARYE*

Professor of Communication Arts and Sciences
B.S., M.A., Ph.D. (Ohio State University)

EUGENIA GLADYS WATSON

Assistant Professor of Education
B.S. in Ed. (North Carolina State A & T University)
M.Ed. (Bridgewater State College)

CORA MILLER WELLS

Assistant Professor of Communication Arts
and Sciences
A.B., M.S. (University of West Virginia)

GEORGE ALEXANDER WEYGAND*

Professor of Physics
B.S., M.Ed. (Bridgewater State College)
Ed.D. (Harvard University)

ALFRED YOUNG WOLFF, JR.*

Associate Professor of History
A.B. (College of William and Mary)
M.A., Ph.D. (University of Virginia)

CHARLES THOMAS WOLPERT

Assistant Professor of Education and Acting
Principal, Burnell School
B.S. (Mount Union College)
M.A. (University of New Hampshire)

CLIFFORD ARTHUR WOOD*

Associate Professor of English
B.S. (Bridgewater State College)
M.A.T. (Brown University)
Ed.D. (Harvard University)

DOROTHY SHERMAN WOOD

Associate Professor of Education
B.S. (Bridgewater State College)
M.Ed. (Boston University)

VINCENT JAMES WORDEN

Assistant Professor of Education
B.S. (Worcester State College)
Ed.M. (Loyola College)
Ed.D. (Clarke University)

JOANNE WUSCHKE

Assistant Professor of Communication Arts
and Sciences
B.S., Ed.M. (Boston University)

JOSEPH ANTHONY YESKEWICZ

Assistant Professor of Health and Physical Education
B.S. (Springfield College)
M.Ed. (University of Massachusetts)

DONG-JAE YIM

Assistant Professor of History
B.A. (Seoul National University)
M.S. (Columbia University)
A.M. (Harvard University)

JOSEPH BERNARD YOKELSON*

Professor of English
B.A. (Brooklyn College)
M.A., Ph.D. (Brown University)

RAYMOND JOHN ZUWALLACK

Assistant Professor of Education
B.S. (University of Connecticut)
M.S. (Southern Connecticut State College)

EMERITUS FACULTY

RALPH SAMUEL BATES

Professor of History, 1952-1976
Acting Chairman, Department of Economics,
1972-1976

A.B., A.M. (University of Rochester)
A.M., Ph.D. (Harvard University)

BEATRICE IRENE BOUCHARD

Associate Professor of Library Science and
Chairman of the Department of Library
Science, 1950-1975.
B.S. (Catholic Teachers College of Providence)
M.A. (Boston College)
M.S. in L.S. (Simmons College)

MARY ISABEL CALDWELL

Assistant Professor of Health and Physical
Education for Women, 1930-1967.
B.S. (University of Wisconsin)
M.A. (New York University)

STANLEY LUTHER CLEMENT

Professor of Education, and Director of the
Division of Professional Education,
1957-1973.

B.S. (Colby College)
M.Ed. (University of Maine)
Ed.D. (Boston University)

MARY MONICA CROWLEY

Assistant Professor of Art, 1941-1959.
B.S. in Ed. (Massachusetts School of Art)
M.S. in Ed. (University of Massachusetts)

RUTH E. DAVIS

Instructor and Principal, Martha M. Burnell
School, 1911-1939.
Professor of Education, and Director of Training,
1939-1953.
B.S. in Ed. (Bridgewater Normal School)
A.M. (Boston University)

ARMAND EUGENE DESAUTELS

Instructor of French, 1965-1973.
 B.L. (Lavel University)
 B.A. (Bernard's College)
 M.A. (Assumption College)

MARY AGNES DOYLE

Assistant Professor of Education, Martha M.
 Burnell School, 1961-1975.
 B.S., M.Ed. (Bridgewater State College)

KARIN VAN LISSEL DUBIN

Professor of Communication Arts and Sciences,
 1965-1975
 A.B. (Parsons College)
 M.A. (University of Chicago)
 M.A. (University of Michigan)
 Ph.D. (Columbia University)

GEORGE HENRY DURGIN

Associate Professor of Mathematics and
 Chairman of the Department of Mathe-
 matics, 1926-1964.
 A.B. (Harvard College)
 Ed.M. (Harvard University)

RALPH SANBORN FELLOWS

Associate Professor of Geology, 1963-1972.
 A.B. (Tufts University)
 M.A., Ph.D. (Boston University)

EDITH HARRIET BRADFORD FROST

Assistant Professor of French, 1919-1955.
 A.B. (Tufts University)
 A.M. (Middlebury College)

RUTH MARY GAMSON

Associate Professor of Education, Martha M.
 Burnell School, 1951-1973.
 B.S., M.Ed. (Bridgewater State College)

ELLA IRENE GRAVES

Associate Professor of Biology, 1930-1960.
 A.B. (Elmira College)
 A.M. (Columbia University)

MARJORIE ELIZABETH HAYWARD

Associate Professor of Music, 1956-1972.
 B.Mus. (New England Conservatory of Music)
 M.Ed. (Bridgewater State College)

PAUL HUFFINGTON

Professor of Earth Sciences and Chairman of
 the Department of Earth Sciences and
 Geography, 1929-1963.
 B.Ed. (Illinois State Normal University)
 M.A. (Clark University)

HELEN LOUISE HULSMAN

Associate Professor of Education, Martha M.
 Burnell School, 1948-1967.
 B.S. (Bridgewater State College)
 Ed.M. (Boston University)

STEPHANIE OLGA HUSEK

Professor of History, 1956-1974.
 A.B. (Seton Hill College)
 Ph.D. (Charles University, Prague)

VIRGINIA CARVILLE JOKI

Associate Professor of English, 1959-1972.
 A.B. (Radcliffe College)
 M.A. (University of Wisconsin)

TIMOTHY LEONARD KELLY

Professor of Physical Science and Chairman of
 the Department of Physical Science,
 1942-1965.
 B.A., M.S. (College of the Holy Cross)
 M.A. (Columbia University)

OLIVE LEE

Instructor of Library Science, 1960-1974.
 A.B. (Radcliffe College)
 B.S. in L.S. (University of North Carolina)

EVELYN RUTH LINDQUIST

Associate Professor of Education, 1957-1970.
 Principal, Martha M. Burnell School,
 1934-1957.
 B.S. (Bridgewater State College)
 M.Ed. (Boston University)

KATHERINE FRANCES LOMAX

Assistant Professor of English, 1959-1970.
 B.A. (Brown University)
 M.A. (Boston College)

IVA VIOLA LUTZ

Professor of Psychology, Director of the
 Division of Continuing Studies, 1930-1971.
 B.S., A.M. (Columbia University)

WALTER LLOYD MAYO

Associate Professor of Music and Chairman
 of the Department of Music, 1954-1967.
 A.B. (Boston College)
 M.Mus. Ed. (Boston University)

CHARLES B. MC MULLEN

Professor of Education, Dean of Studies,
 1944-1965.
 B.S., A.M. (Columbia University)

FREDERICK AUGUSTUS MEIER

Professor of Secondary Education, 1970-1975.
 Dean of Men and Professor of Science,
 1936-1954.
 Chairman of the Science Department,
 1950-1954.
 Director of Summer Session, S.T.C. Hyannis,
 1952.
 B.S., M.S. (Boston College)
 Adv.Cert. (Boston University)
 D.Hs. (Indiana University)
 Honorary LLD (Rhode Island College)
 Honorary D.Pub.Adm. (Salem State College)

ANNABELLE MC CONNELL MELVILLE

Commonwealth Professor of History,
 1953-1975.
 A.B., M.A. (State University of New York at
 Albany)
 Ph.D. (The Catholic University of America)

JOSEPH GRAESSLE MOORE

Professor of Anthropology, Chairman of the
Department of Anthropology, and Director
of the Division of Behavioral Sciences,
1967-1972.

B.A. (Hamline University)

B.D. (Seabury-Western College)

M.A., Ph.D. (Northwestern University)

MARY JOSEPHINE MORIARTY

Professor of Health and Physical Education
for Women and Chairman of the Department
of Health and Physical Education for
Women, 1944-1970.

A.B. (Villa Maria College)

B.S., M.Ed., Ed.D. (Boston University)

MARY NOEL

Associate Professor of History, 1964-1973.

A.B. (Radcliffe College)

M.A., Ph.D. (Columbia University)

DANIEL JOSEPH NOONAN

Associate Professor of Economics and
Chairman of the Department of Economics,
1952-1969.

A.B. (Boston College)

Ed.M. (Harvard University)

ROSE HELENA O'CONNELL

Associate Professor of Sociology and Chairman
of the Department of Sociology, 1953-1964.

B.A. (Catholic University)

M.A. (Radcliffe College)

MAURICE J. ROTSTEIN

Professor of History, 1964-1976

B.S. (City College of New York)

M.A., Ph.D. (New York University)

ELLEN B. RUCKER

Instructor of Education, Martha M. Burnell
School, 1958-1975.

B.S. (Hyannis State Teachers College)

M.Ed. (Bridgewater State College)

ELLEN MARIE SHEA

Professor of Education, Dean of Students,
and Dean of Women, 1953-1974.

B.S. (Bridgewater State College)

M.Ed. (Boston University)

Ph.D. (University of Connecticut)

HELEN ELIZABETH SLEEPER

Instructor of Education, Martha M. Burnell
School, 1924-1958.

Diploma (Castine State Normal School)

B.S. (Boston University)

DORIS MARGARET SPRAGUE

Associate Professor of Education and
Principal, Martha M. Burnell School,
1946-1973.

B.S., M.Ed. (Bridgewater State College)

DORIS EMMA TEBBETTS

Associate Professor of Arts, 1950-1975.

B.S. (Massachusetts College of Art)

M.A. (University of Minnesota)

CHARLOTTE HELEN THOMPSON

Instructor of Education, and Principal,
Martha M. Burnell School, 1919-1956.

B.S.E. (Boston University)

BALFOUR STIRLING TYNDALL

Commonwealth Associate Professor of Educa-
tion, 1935-1964.

A.B. (University of Maine)

Ed.M. (Harvard University)

CORA MAY VINING

Associate Professor of Library Science,
1958-1972.

B.S. (Bridgewater State College)

A.M. (Boston University)

B.S. (Simmons College)

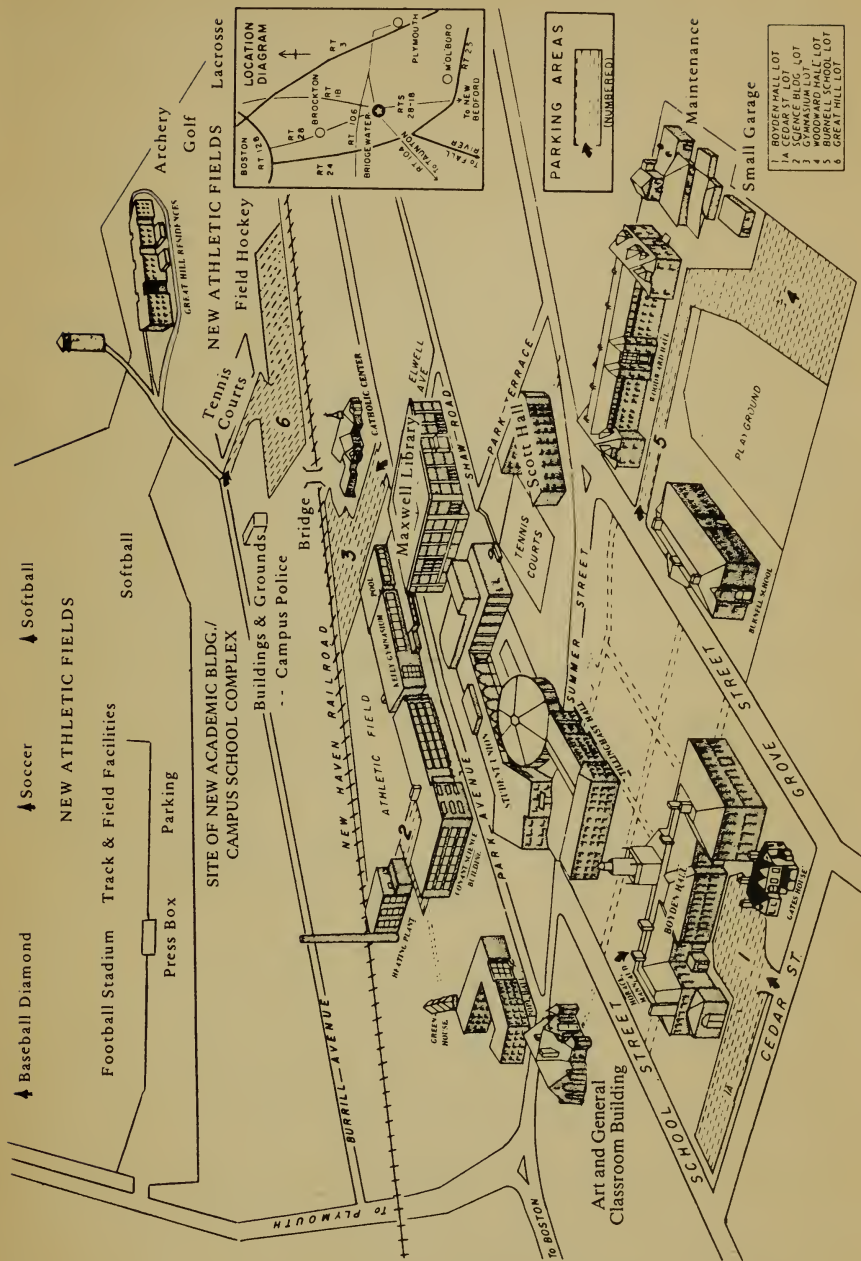
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BRIDGEWATER STATE COLLEGE



DIRECTIONS FOR CORRESPONDENCE

The general address for all correspondence is: Bridgewater State College, Bridgewater, Massachusetts 02324, telephone 617-697-8321. In order to avoid delay, correspondents are requested to note the following directions when requesting information and materials from the College.

Requests for:

Catalogues should be addressed to the Director of Admissions or the Office of the Graduate School.

Continuing Education brochures should be addressed to the Division of Continuing Education.

Transcripts

Students who hold a bachelor's and/or a master's degree from this college should write to the Registrar.

Students who have not completed their bachelor's degree should write to the Registrar for a transcript of courses taken through the Day Session, and to the Director of Continuing Education for a transcript of courses taken through the Division of Continuing Education.

Students who have not completed their master's degree at Bridgewater State College, should write to the Director of Continuing Education for a transcript of courses taken.

There is a charge of \$1.00 per transcript.

Inquiries Concerning:

Health services, housing, loans, and scholarships, should be addressed to the Dean of Student Affairs.

The Summer Session at Bridgewater State College should be addressed to the Director of Continuing Education.

The Summer Session at Hyannis should be addressed to the Director of the Hyannis Summer Session.

The Graduate School should be addressed to the Dean of the Graduate School.

Placement and student teaching should be addressed to the Director of Teacher Preparation and Placement.

Continuing Education should be addressed to the Director of Continuing Education.

Financial Aid should be addressed to the Financial Aid Officer.

Alumni Affairs should be addressed to the Executive Secretary of the Alumni Association.

Academic employment should be addressed to the chairman of the appropriate department.

Non-academic employment should be addressed to the Assistant to the President.

Teacher Certification should be addressed to the Director of Teacher Certification, Department of Education, 182 Tremont Street, Boston, Massachusetts 02111.

Matters not covered above, and correspondence bearing upon the general interests of the College, should be addressed to the President.

BRIDGEWATER
STATE COLLEGE
BRIDGEWATER
MASSACHUSETTS 02324

NON-PROFIT
ORGANIZATION
U.S. POSTAGE
PAID
BRIDGEWATER, MA 02324
PERMIT NO. 9